

Cytec Solvay Group

2021 Annual Groundwater Performance Monitoring Report

1300 Revolution Street
Havre de Grace, Maryland
USEPA ID# MDD 003 075 942

December 15, 2021

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Contents

A	cronym	ns and Abbreviations	iv
Ε	xecutiv	e SummaryE	S-1
1	Intro	oduction	1
2	Site	Background	2
	2.1	Site Location	2
	2.2	Hydrogeologic Setting	2
	2.3	Monitoring Well Network	3
	2.4	Constituents of Concern and Groundwater Impacts	3
	2.5	Interim Remedial Measures for Groundwater	4
	2.6	Final Remedy for Groundwater	4
3	Cor	rective Action Objectives	6
	3.1	Points of Compliance	6
	3.2	Numerical Performance Goals	6
4	Site	Activities	7
	4.1	System Operation	7
	4.2	System Sampling	8
	4.3	System Operation and Maintenance Activities	8
	4.4	Groundwater Elevation Measurements	. 10
	4.5	Performance Monitoring	. 10
	4.6	Data Validation and Usability	. 11
5	Perf	formance Monitoring Results	. 12
	5.1	Groundwater Elevations	. 12
	5.2	Groundwater Analytical Results	. 12
6	Perf	formance Evaluation	. 14
	6.1	Groundwater Stabilization System Performance	. 14
	6.1.1	Mass Removal	. 14
	6.1.2	P Hydraulic Capture Analysis	. 15
	6.1	1.2.1 Groundwater Elevation Contours	. 15
	6.1	1.2.2 Profile Flow Nets	. 16
	612	Constituent of Concern Trends	16

	6.1.4	Fate a	nd Transport Estimate16
	6.1.5	Discus	ssion of Final Remedy Performance17
	6.1.	5.1 1,2	-Dichloroethane 18
	6.	1.5.1.1	Intermediate Wells
	6.	1.5.1.2	Deep Wells
	6.	1.5.1.3	Point of Compliance Wells19
	6.1.	5.2 Me	thylene Chloride19
	6.1.	5.3 Otl	ner Constituents of Concern19
6	.2 N	/lonitore	d Natural Attenuation Assessment19
7		-	l Conclusion21
8			23
9	Refer	ences	24

Exhibits

- Exhibit 1. 2021 Performance Monitoring Results Summary
- Exhibit 2. 2021 Summary of Average Daily Flow Rates and Monthly System Uptime
- Exhibit 3. Site Photos of Pump Cleaning Impact
- Exhibit 4. Time and Distance Calculation Results

Tables

- Table 1. Well Details and Groundwater Elevations
- Table 2. 2021 Monitoring Program Summary
- Table 3. Numerical Corrective Action Objective Goals
- Table 4. Extraction Well and Effluent Monitoring
- Table 5. Summary of Routine and Non-Routine Operation and Maintenance Activities
- Table 6. Groundwater Analytical Results
- Table 7. Summary of Percent Change from Historical Maximum Concentrations Intermediate and

Deep Monitoring Wells

Figures

Figure 1.	Site Location Map
Figure 2.	Site Plan
Figure 3.	Summary of 2021 Pumping Volumes and Rates
Figure 4.	Groundwater Elevation Contour Map Shallow Overburden Zone September 13, 2021
Figure 5.	Groundwater Elevation Contour Map Intermediate Overburden Zone September 13, 2021
Figure 6.	Groundwater Elevation Contour Map Deep Overburden Zone Fall 2021
Figure 7.	1,2-Dichloroethane Results for Intermediate Overburden
Figure 8.	1,2-Dichloroethane Results for Deep Overburden
Figure 9.	Mass Removal of 1,2-DCA and Methylene Chloride
Figure 10.	Comparison of 1,2-DCA Isoconcentration Contours (2014 and 2021)
Figure 11.	Cross Section Location Map
Figure 12.	Cross Section A-A' with Profile Flow Nets
Figure 13.	Cross Section B-B' with Profile Flow Nets
Figure 14.	Cross Section C-C' with Profile Flow Nets
Figure 15.	MNA Indicators – 2021

Appendices

Appendix H. Trend Plots

Appendix A.	Field Documentation
Appendix B.	System O&M Laboratory Analytical Reports
Appendix C.	Monthly Compliance Reports – 2021
Appendix D.	Groundwater Laboratory Analytical Reports
Appendix E.	Data Validation Report
Appendix F.	Groundwater Stabilization System Details
Appendix G.	Historical Analytical Data

Acronyms and Abbreviations

μg/L microgram per liter

1,1,2-TCA 1,1,2-trichloroethane

1,2-DCA 1,2-dichloroethane

2021 Annual PMR 2021 Annual Groundwater Performance Monitoring Report

Arcadis U.S., Inc.

BBL Blasland, Bouck & Lee, Inc.
CAO corrective action objective

CMS Report Corrective Measures Study Report

CMS Work Plan Corrective Measures Study Work Plan

COC constituent of concern

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D quantified in a secondary dilution (lab qualifier); compound was detected after dilution

DDC density-driven convection

ft feet

gpm gallon per minute

J estimated concentration (lab qualifier)

MCL maximum contaminant level

MNA monitored natural attenuation

msl mean sea level

O&M operation and maintenance

PCE tetrachloroethene

PMP Performance Monitoring Plan

PMR Performance Monitoring Report

POC point of compliance

POTW publicly owned treatment works

RCRA Resource Conservation and Recovery Act

Rd Retardation factor

RFI Report Resource Conservation and Recovery Act Facility Investigation Report

2021 Annual Groundwater Performance Monitoring Report

site Cytec facility, located at 1300 Revolution Street in Havre de Grace, Maryland

TCE trichloroethene
THM trihalomethane

TOC total organic carbon

USEPA United States Environmental Protection Agency

UST underground storage tank

VC vinyl chloride

VOC volatile organic compound

Executive Summary

On behalf of Cytec Solvay Group (Cytec), Arcadis U.S., Inc. (Arcadis) prepared this 2021 Annual Groundwater Performance Monitoring Report (2021 Annual PMR) for the Cytec facility located at 1300 Revolution Street in Havre de Grace, Maryland (site). Environmental activities at the site are conducted in accordance with the requirements of Resource Conservation and Recovery Act (RCRA) Permit ID# MDD 003 075 942, with oversight by the United States Environmental Protection Agency Region 3. The site's RCRA permit became effective on December 6, 2012.

This 2021 Annual PMR presents the 2021 groundwater analytical results, following implementation of the final remedy (a combination of groundwater use restrictions, enhancement of the existing groundwater stabilization system, and long-term monitoring) in January 2015. Pre-implementation groundwater sampling (performed prior to modification of the groundwater stabilization system) was conducted in October and November 2014, as summarized in the Groundwater Monitoring Results Technical Memorandum (Arcadis 2015a). Construction and implementation of the expanded groundwater stabilization system is documented in the Corrective Measures Implementation Construction Completion Report (Arcadis 2015b). Annual performance monitoring was conducted in September and October 2021, in accordance with the monitoring program established in the Performance Monitoring Plan (PMP; Arcadis 2012a) and subsequent monitoring report recommendations.

Concentration trends for site constituents of concern (COCs) have demonstrated significant groundwater quality improvements (i.e., concentrations have decreased by orders of magnitude at many on- and off-site monitoring wells) since implementation of the interim remedial measures at the site, which were initiated in 1996. The groundwater quality improvements are the result of a combination of on-site mass removal, off-site mass flux reductions, and natural attenuation processes. Prior to operation of the expanded groundwater stabilization system in January 2015, elevated concentrations of 1,2-dichloroethane (1,2-DCA) remained at several locations, including intermediate monitoring well MW-6I and deep monitoring wells MW-3, MW-27, and MW-28D. Based on the 2021 performance monitoring results, 13 of 19 monitoring wells are in compliance with corrective action objective (CAO) goals (i.e., no COCs exceeded their respective numerical CAO goals), as summarized in Exhibit 1, below.

Exhibit 1. 2021 Performance Monitoring Results Summary

in Compliance	Performance Monitoring Wells in Compliance with CAO Goals for all COCs		Performance Monitoring Wells Not in Compliance with CAO Goals			
Monitoring Well Location	Location/ Designation	Monitoring Well Location	Location/ Designation	COCs Exceeding CAO Goals		
MW-4	On site	MW-3	On site	1,2-DCA, methylene chloride, VC		
MW-8D	On site	MW-6I	On site	1,2-DCA		
MW-8S	On site	MW-13D	On site	1,2-DCA		
MW-12D	On site	MW-19D1	Off site	1,2-DCA		
MW-12S	On site	MW-23	Off site	1,2-DCA		
MW-14	Off site	MW-28D	On site	1,2-DCA		
MW-14I	Off site					
MW-16	Off site					
MW-18	Off site					
MW-20D1	Off site					
MW-22D	Off site					
MW-25I	On site					
MW-27	Off site					

Notes:

1.2-DCA = 1.2-dichloroethane

VC = vinyl chloride

Six monitoring wells (MW-3, MW-12S, MW-12D, MW-13D, MW-19D1, and MW-20D1) are used for point of compliance (POC) monitoring during active operation of the groundwater stabilization system. At three POC locations (MW-12S, MW-12D, and MW-20D1), COC concentrations were less than their respective CAO goals for each COC. At downgradient POC well MW-19D1, the concentration of 1,2-DCA (30 micrograms per liter [μ g/L]) exceeded the CAO goal of 5 μ g/L in 2021, consistent with the 2020 result (31 μ g/L). 1,2-DCA concentrations at this location remained less than the CAO goal of 5 μ g/L between 2014 and 2017: November 2014 (3.0 μ g/L), June 2015 (1.6 μ g/L), November 2015 (1.9 μ g/L), and October 2017 (2.8 μ g/L). As such, it is believed that the 2018 to 2021 stable detections of 1,2-DCA in downgradient POC well MW-19D1 are representative of a slug of mass located beyond the capture zone of the expanded groundwater stabilization system that is now passing through the downgradient portion of the site as monitored by well MW-19D1. It is expected that concentrations of 1,2-DCA will attenuate (reduce) through time at this location. This is further supported by the dramatic reduction in COC concentrations at off-site monitoring well MW-27 (no COCs detected greater than their respective CAO goals in 2021) since the expansion of the groundwater stabilization system in 2015.

At on-site POC monitoring well MW-3, 1,2-DCA, methylene chloride and VC were detected at concentrations exceeding their CAO goals. MW-3 is located at the former UST tank farm in the southern corner of the site. At MW-3, methylene chloride (35 J μ g/L) was greater than its CAO goal of 5 μ g/L and less than its historical peak

concentration of 15,000 μ g/L in October 1997. Methylene chloride was previously detected in 2019 (38 μ g/L) and 2020 (53 μ g/L).

In 2021, the maximum detected concentration of methylene chloride in downgradient extraction well EW-02 was 17,000 µg/L. Methylene chloride was not detected in 2021 in any of the other monitoring wells identified in the PMP (Arcadis 2012a). Groundwater samples will continue to be collected from performance monitoring wells listed in Exhibit 1 including MW-3 and analyzed for methylene chloride to further evaluate the isolated detections observed to date. In general, concentrations of COCs have remained stable or declined following implementation of the expanded groundwater stabilization system in January 2015. Exceptions include the presence of VC at MW-3 due to natural attenuation processes and the recent presence of 1,2-DCA concentrations in downgradient well MW-19D1.

Furthermore, concentrations of the primary site COC, 1,2-DCA, have varied without clear trends since the last reporting period. The concentration of 1,2-DCA in EW-01 ranged from 83 μ g/L to 1,100 μ g/L in 2021, compared to 240 μ g/L to 790 μ g/L in 2020. In EW-02 the concentration of 1,2-DCA ranged from 1,800 D μ g/L to 17,000 μ g/L in 2021, compared to 2,900 μ g/L to 19,000 μ g/L in 2020.

Groundwater samples were collected from select monitoring wells and analyzed for biogeochemical parameters and degradation products to assess the biodegradation potential of the groundwater COCs and current groundwater redox conditions. The biogeochemical data collected to date indicate that the redox conditions range from mildly to strongly reducing. A degradation product, methane, was detected in one on-site well (MW-3), several off-site wells (MW-14I, MW-16, MW-23, and MW-27) and downgradient POC wells MW-19D1 and MW-20D1. An advanced degradation product, ethene, was detected at significant concentrations (greater than 100 µg/L) in MW-27 from 2014 to 2021. The presence of these compounds indicates that 1,2-DCA, TCE, and their degradation products are readily attenuating, resulting in mass destruction within the off-site contaminant plume. Conservative fate and transport calculations were completed for 1,2-DCA to estimate the distance down-gradient that 1,2-DCA concentrations in groundwater become less than the CAO (5 µg/L). The results indicate that 1,2-DCA concentrations in well MW-19D1 will attenuate to concentrations below the CAO before reaching the Chesapeake Bay at its closest point located approximately 632 feet down-gradient from MW-19D-1.

In 2021, 3,382,441 gallons of COC-impacted groundwater were extracted by the system and discharged to the local publicly owned treatment works, an approximate decrease of 27 percent compared to the extracted volume reported for 2021. System extraction data for December 2021 was estimated because the annual reporting due date is being voluntarily shifted from January 31 to December 31 each year, thus December was not part of the period of performance for this report. Data from December 2021 will be reported in the 2022 PMR. The average monthly uptime for the system from January to November 2021 was 76 percent, nine percent lower than 2020. The three extraction wells were not operated as consistently in 2021 compared to 2020, due to frequent EW-02 pump issues, and unforeseen equipment failures that caused protracted system shutdowns due to supply chain issues with obtaining replacement parts. While biofouling of the well screens, pump motors, and subsurface piping network continue to hinder system performance, routine and proactive operation and maintenance activities conducted in 2021 optimized overall system performance, similar to 2020.

The observed water-level measurements indicate that under pumping conditions, the deep overburden zone is hydraulically captured across the entire width of the on-site impacted area. Moreover, the observation that COCs in wells downgradient of the northeastern property continue to demonstrate decreasing or stable trends is further evidence that adequate hydraulic capture is being affected when the extraction wells are operating.

A combination of hydraulic capture, mass removal, mass flux reductions, and natural attenuation processes are continuing to improve groundwater quality at the site and inhibit contaminant mass flux migration downgradient of the site boundary.

Continued operation of the groundwater stabilization system is recommended to maintain groundwater capture. Operation of the groundwater stabilization system is planned for at least 15 years (2015 through 2030). The seventh year of operation was performed in 2021. Continued annual groundwater monitoring is planned. The next performance monitoring event is tentatively scheduled for August 2022 with annual PMR submittal in December 2022. To maintain the operational capture zone of the groundwater stabilization system in 2022, an annual well rehabilitation and hydro-jetting event will be conducted in addition to routine pump cleaning throughout the year. Routine pipe cleaning will be conducted quarterly, or as needed based on well performance. Additionally, routine system inspections and timely leak repairs will facilitate continued system operation. Effluent samples collected during routine system inspections will be used to optimize flow rate at each extraction well.

1 Introduction

On behalf of Cytec Solvay Group (Cytec), Arcadis U.S., Inc. (Arcadis) prepared this 2021 Annual Groundwater Performance Monitoring Report (2021 Annual PMR) for the Cytec facility, located at 1300 Revolution Street in Havre de Grace, Maryland (site). Environmental activities at the site are conducted in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA) Permit ID# MDD 003 075 942, with oversight by United States Environmental Protection Agency (USEPA) Region 3. The site RCRA permit became effective on December 6, 2012.

The final remedy for groundwater is a combination of groundwater use restrictions, enhancement of the interim groundwater stabilization system, and long-term monitoring in accordance with the Final Decision and Response to Comments (USEPA 2012). A Performance Monitoring Plan (PMP; Arcadis 2012a) was subsequently prepared in 2012. This 2021 Annual PMR presents the seventh year (2021) of groundwater analytical results following implementation of the final remedy in 2015. Specifically, this 2021 Annual PMR describes the operational status of the groundwater stabilization system and current groundwater results and evaluates the extent of on-site capture and downgradient natural attenuation of the constituents of concern (COCs).

Pre-implementation groundwater sampling (performed prior to the 2015 modification of the groundwater stabilization system) was conducted in October and November 2014, as summarized in the Groundwater Monitoring Results Technical Memorandum (Arcadis 2015a). Construction and pre-implementation activities related to the expanded groundwater stabilization system are documented in the Corrective Measures Implementation Construction Completion Report (Arcadis 2015b).

Performance monitoring has continued annually in accordance with the PMP (Arcadis 2012a) and was modified pursuant to the recommendations outlined in subsequent Annual Performance Monitoring Reports, as described below:

- 2016. Tetrachloroethene (PCE) and carbon disulfide were removed from the COC list based on analytical results, and total organic carbon (TOC) was added to the monitored natural attenuation (MNA) parameter list. The groundwater sampling method was modified to a passive sampler (HydraSleeves™) for use with both volatile organic compounds (VOCs) and MNA parameters. These modifications were presented in Section 7 of the 2015 Annual PMR Report (Arcadis 2016). Approval of these modifications was documented in comments on the 2015 Annual PMR, received from the USEPA via an electronic mail on August 2, 2016 (USEPA 2016).
- 2018. Monitoring wells MW-11D, MW-16, and MW-27 were reclassified as deep overburden wells in 2018.
 This proposed change was documented in the 2017 Annual PMR (Arcadis 2018). Approval of this change was documented in an electronic mail received from the USEPA on February 28, 2018 (USEPA 2018).
- 2020. Monitoring wells MW-6 and MW-15 were removed from the monitoring program in 2020 because no
 detections of site COCs at concentrations greater than laboratory reporting limits occurred during the last 5
 years of monitoring. This proposed change was documented in the 2019 Annual Groundwater Performance
 Monitoring Report (Arcadis 2020a). Approval of this change was documented in an electronic email from the
 USEPA on February 10, 2020 (USEPA 2020).

In September 2021, 19 wells were sampled for VOCs and 8 wells were sampled for MNA parameters.

2 Site Background

This section describes the site background information including the site location, hydrogeologic setting, and groundwater characterization. This information is presented to assist the performance assessment of the groundwater stabilization system and COC trends.

2.1 Site Location

The site occupies an approximately 27-acre parcel, located at 1300 Revolution Street in Havre de Grace, Maryland (Figure 1). The facility on site began operations in 1962, manufacturing structural adhesives for the aerospace industry. A portion of the facility was used to manufacture honeycomb core material used in conjunction with adhesives to form fuselage and wing components of aircrafts between 1981 and 1992. Currently, Cytec produces specialty bonding adhesives at this facility, including modified epoxy adhesives, adhesive primers, high-temperature resin systems, and thermoplastic materials (e.g., graphite, DECLAR®) for the aerospace industry.

As shown on Figure 2, the site is bisected by the Norfolk Southern Railroad and an intermittent stream (a branch of Lilley Run). The adhesives building is located on the western portion of the site. The facility warehouse occupies the eastern half of the site. Figure 2 also shows the areas surrounding the site, which include a mixture of light industrial and high-density residential properties. No structures are currently present beyond the warehouse on the eastern portion of the site. The Havre de Grace wastewater treatment plant, a local publicly owned treatment works (POTW), is located immediately southeast of the site boundary (Figure 1).

2.2 Hydrogeologic Setting

Historically, overburden groundwater flow was interpreted by dividing the overburden into two separate water-bearing units, corresponding to the Upper and Lower Talbot formation. However, this interpretation was not able to accurately describe COC migration in groundwater at locations where multiple sand and gravel layers are present at different elevations within the Lower Talbot. Based on discussions with the USEPA during development of the Phase IV RCRA Facility Investigation Report (RFI Report; Arcadis 2008a, 2008b), a decision was made to subdivide the overburden into the following three water-bearing units:

- Shallow overburden zone. Consists of the silts and similar fine-grained materials present in the upper 10 to 20 feet of the overburden (on site).
- Intermediate overburden zone. Consists of the uppermost sand and/or sand and gravel layers that underlie the fine-grained materials of the shallow overburden zone in the upper 20 to 30 feet of the overburden (on site and at deeper depths off site).
- Deep overburden zone. Consists of a second zone of permeable sand and/or sand and gravel layers that
 occur below the intermediate zone at locations where a layer of lower permeability silty clay separates the
 intermediate and deep overburden into two separate flow zones in the upper 30 to 45 feet of the overburden
 (on site and at deeper depths off site).

As a result of these changes to the hydrostratigraphic conceptual site model, many of the existing monitoring wells were reclassified as either intermediate or deep overburden wells in the RFI Report (Arcadis 2008a, 2008b). The well specifications and water-bearing unit designations are presented in Table 1.

Groundwater flows generally from west to east across the site and surrounding area in each zone. The similarity in groundwater flow patterns is most apparent in the intermediate and deep overburden zones. This observation, supported by the detection of groundwater impacts in the intermediate and deep overburden zones, indicates that the sand and gravel layers within these two water-bearing units are hydraulically connected; however, geologic cross sections provided in the PMP (Arcadis 2012a) show that there are discontinuous silt and clay lenses in the intermediate and deep overburden zones.

The hydrogeologic setting is further discussed in Section 5 (Updated Site Conceptual Model) of the RFI Report (Arcadis 2008b) and Section 2.5 (Site Conceptual Model) of the Corrective Measures Study Report (CMS Report; Arcadis 2012b).

2.3 Monitoring Well Network

A monitoring well network was installed during previous site investigations and consisted of 33 on-site and 16 off-site monitoring wells (Figure 2). The current groundwater sampling program includes 19 monitoring wells as presented in Table 2. In 2021, one site-wide gauging event was completed between September 13 and September 15. Wells MWBR-1, MW-19D1, and MW-19D2 were inaccessible during the site-wide gauging event and were accessed separately on October 18 (MWBR-1) and October 27, 2021 (MW-19D1 and MW-19D2). An additional 15 on-site and five off-site monitoring wells were gauged but were not sampled as a component of the PMP (Arcadis 2012a). The groundwater stabilization system was fully operational and pumping during the gauging event. The 2021 gauging activities are summarized on the well inspection checklists provided in Appendix A.

2.4 Constituents of Concern and Groundwater Impacts

Historical site investigations have identified the following COCs for groundwater:

- 1,1,2-Trichloroethane (1,1,2-TCA)
- 1,2-Dichloroethane (1,2-DCA)
- Chloroform
- Methylene chloride (also commonly known as dichloromethane)
- PCE
- Trichloroethene (TCE)
- Vinyl chloride (VC)
- · Carbon disulfide

In 2016, PCE and carbon disulfide were removed from the COC list due to limited detections. In 2021, the only COCs present at elevated concentrations are 1,2-DCA, VC, and methylene chloride as further described in Section 5.2. The predominant COC in groundwater is 1,2-DCA.

According to facility personnel, 1,2-DCA was used as a raw material and cleaning solvent at the site from approximately 1967 through July 1990. A 6,000-gallon underground storage tank (UST), located at the UST tank farm in the southern corner of the site boundary near the adhesives building (Figure 2), was used to store bulk 1,2-DCA. The UST was removed in December 1991.

Another COC in groundwater is methylene chloride, which was also used as a raw material and cleaning solvent at the facility from approximately 1967 through April 2003. Methylene chloride was stored in a 6,000-gallon UST at the UST tank farm (removed in December 1991), in a 3,000-gallon aboveground storage tank from September 1992 through December 1993, and in 55-gallon drums until use was discontinued in 2003. Methylene chloride groundwater impacts are present in extraction well EW-02, which is downgradient of the drum storage area, as shown on Figure 2. There are no known historical or current uses of 1,1,2-TCA, chloroform, PCE, TCE, VC, or carbon disulfide at the site.

The results of previous site investigations suggest that groundwater impacted with 1,2-DCA from the vicinity of the adhesives building migrated downward and into the sand and gravel layers of the intermediate and deep overburden zones beneath portions of the site (Arcadis 2008b). Impacted groundwater then migrated downgradient through these two zones and off site to the northeast, where these zones are connected near MW-27 (located off site, approximately 146 feet east of EW-01). From this point, the impacted groundwater continued to migrate through the intermediate overburden zone further off site to the northeast, spreading into the deep overburden zone near monitoring wells MW-14 (located approximately 520 feet downgradient of MW-10D) and MW-18 (located off site, approximately 270 feet northeast of MW-10D), where the two flow zones separate again.

2.5 Interim Remedial Measures for Groundwater

Several interim remedial measures have been implemented to address impacted groundwater at the site, including a density-driven convection (DDC) groundwater treatment system (1996 to 1999), NOVOCs™ groundwater treatment system (1998 to 1999), and a groundwater stabilization system (2002 to 2014). Details pertaining to the implementation and effectiveness of the DDC and the NOVOCs™ treatment systems are provided in the Phase II RCRA Facility Investigation (Blasland, Bouck & Lee, Inc. [BBL] 1998) and the CMS Report (Arcadis 2012b).

The interim groundwater stabilization system was originally installed in 2001 to control off-site migration of the dissolved-phase chlorinated VOC impacts in the intermediate and deep overburden groundwater at the northeastern site boundary. The interim groundwater stabilization system included one extraction well (former monitoring well MW-10D) and conveyed extracted groundwater to the City of Havre de Grace POTW. The interim system began operation in April 2002 and continued through mid-November 2014.

2.6 Final Remedy for Groundwater

As described in the Final Decision and Response to Comments for the Site (USEPA 2012), the final remedy for groundwater is a combination of groundwater use restrictions, enhancement of the interim system, and long-term monitoring until corrective action objective (CAO) goals are met. Groundwater stabilization was implemented to reduce the migration of impacted groundwater across the site boundary. As part of the final remedy, the system was expanded to include the installation of two additional extraction wells (EW-01 and EW-02) to increase

hydraulic control and further reduce the migration of impacted groundwater beyond the designated points of compliance (POCs) at the site boundary (refer to Section 3.1).

The groundwater stabilization system expansion was conducted between October and December 2014, and system shakedown and startup testing was conducted in January 2015. Construction and startup of the expanded stabilization system is documented in the Corrective Measures Implementation Construction Completion Report (Arcadis 2015b).

The extracted groundwater continues to be discharged directly to the POTW in accordance with permit number CYT-2013-101. Currently, groundwater is pumped from three extraction wells (EW-01, EW-02, and MW-10D) at specific rates based on mass loading estimations (Arcadis 2015b). Flow rates can be adjusted, as necessary, to optimize the hydraulic control of COC-impacted groundwater while adhering to the discharge limit requirements established by the POTW. The 2021 daily pumping volumes and average cumulative pumping rates per month are shown on Figure 3. These daily pumping volumes are presented to show system uptime (i.e., when the system was running).

3 Corrective Action Objectives

As stated in the PMP (Arcadis 2012a), the CAOs address COCs present in groundwater at the site and provide the basis for the formulation and development of the corrective measure selected in the CMS Report (Arcadis 2012b): On-Site Expansion of the Existing Groundwater Stabilization System. The CAOs for the final remedy at the site are as follows:

- Manage future site use such that residential land use within the site boundary is restricted.
- Minimize and/or manage exposure to groundwater containing COC concentrations greater than established performance goals at an appropriate point of exposure.
- Maintain no unacceptable population-level ecological risks.
- Restore groundwater to established performance goals to return groundwater to maximum beneficial use at an appropriate POC.

These goals are met through operation of the system as well as implementation of institutional controls and long-term monitoring of COCs and MNA parameters. The system is operated at the site to increase hydraulic control of the COC-impacted groundwater and further reduce migration of COCs beyond the site POCs, thus reducing the potential risk associated with impacted groundwater.

3.1 Points of Compliance

POCs were selected throughout the area of COC-impacted groundwater and are based on returning groundwater to its maximum beneficial use. These POCs were selected using a throughout-the-plume/ unit boundary approach. The POCs include two locations intended to provide information regarding the downgradient extent of COCs (MW-19D1 and MW-20D1, located approximately 1,325 feet downgradient from the northeast corner of the site) and four locations intended to provide information regarding migration of impacted groundwater across the site boundary (MW-12S, MW-12D, and MW-13D located along the northeast property boundary, and MW-3 located in the southeast corner of the site), as indicated in the PMP (Arcadis 2012a). The POC monitoring wells are presented in Table 2.

3.2 Numerical Performance Goals

In support of the CAOs, numerical performance goals were established based on USEPA maximum contaminant levels (MCLs) for groundwater. For COCs with no MCLs, USEPA Region 3 screening levels for tapwater were used, as described in the USEPA-approved Corrective Measures Study Work Plan (CMS Work Plan; Arcadis 2008c). Table 3 identifies the COCs for groundwater at the site and their numerical CAO performance goals, as defined in the CMS Work Plan (Arcadis 2008c).

The approved numerical CAO for chloroform is the USEPA Regional Screening Level of 0.19 micrograms per liter (μ g/L), which is lower than the typical laboratory reporting limit. Chloroform is regulated as a trihalomethane (THM) by the USEPA, which has a cumulative THM MCL of 80 μ g/L. Chloroform results are compared to both screening levels in Section 5.2.

4 Site Activities

Site activities conducted in 2021 consisted of the following:

- Routine and non-routine operation and maintenance (O&M) of the groundwater stabilization system, including completion of a pipe jetting event, routine pump cleaning, and leak repairs.
- Annual groundwater sampling using passive samplers at the 19 performance monitoring wells for COCs and field parameters.
- Annual groundwater sampling at a subset of the 19 monitoring wells for MNA parameters (TOC, sulfate, iron [total and dissolved], and dissolved gasses [ethene, ethane, and methane]).
- Completion of a site-wide synoptic groundwater elevation survey during a period of consistent groundwater stabilization system operation to enhance the ability to interpret groundwater flow direction at the site.

Site activities were conducted in accordance with the site-specific Health and Safety Plan (Arcadis 2021b), standard operating procedures, the monitoring program requirements established in the PMP (Arcadis 2012a), and as modified in the subsequent annual reports (Arcadis 2016, 2018, 2020a, 2021a). The current performance monitoring program summary is presented in Table 2. Figure 2 shows the groundwater monitoring well network.

4.1 System Operation

The groundwater stabilization system has operated continuously with infrequent, short-duration shutdowns (Figure 3) in February 2021, March 2021, June 2021, and July 2021 through August 2021. On February 4, 2021, leaks within the system enclosure at MW-10D were identified. Leaked water was captured in the floor drain of the system enclosure and conveyed to the MW-10D well vault. Repairs were completed on February 17, 2021, and the system was returned to operational status. On March 14, 2021, an EW-01 pipe leak alarm triggered an automatic system shutdown which triggered other system alarms. The system was reset and returned to operational status on March 22, 2021. On June 5, 2021, a leaking Kunkle valve at the T-401 tank triggered a system shutdown. On June 17, 2021, the orientation of the valve was changed to stop the leak and the system was returned to operational status. On July 10, 2021, the MW-10D motor overloaded and failed to start and the system was shut down; due to supply chain issues, the motor lead took over a month to obtain. On August 16, 2021, the motor and motor lead at MW-10D were replaced and the system was returned to operational status.

Monthly uptimes were generally greater than 60 percent for each month as summarized in Exhibit 2, below. The average monthly uptime for the system from January to November 2021 was 76 percent. Average monthly pumping rates in gallons per minute (gpm) accounting for downtime are summarized in Exhibit 2, below, and shown on Figure 3. Data from December 2021 were not included in the 2021 period of performance and will be included in the 2022 PMR.

Exhibit 2. 2021 Summary of Average Daily Flow Rates and Monthly System Uptime

Month	Average Daily Flow Rate (gpm)	Monthly Uptime (Percent)	
	2021	2021	
January	8.5	100	
February	4.8	57	
March	7.3	74	
April	9.2	100	
May	9.2	97	
June	5.6	63	
July	2.2	32	
August	4.7	52	
September	6.9	93	
October	6.2	87	
November	6.4	77	
Average:	6.4	76	

4.2 System Sampling

Extraction well effluent and combined system discharge are analyzed for VOCs via USEPA Method 624 and for metals via USEPA Method 200.7 (Revision 4.4) as needed to assess system performance. Specifically, samples were collected on March 9, August 26, September 15, and November 2, 2021. Extraction well analytical results for 1,2-DCA and methylene chloride are presented in Table 4. The remaining results are presented in the O&M laboratory reports (Appendix B). Extraction well effluent samples are collected while the system is running.

The semiannual combined system effluent samples were collected in April and November 2021 and analyzed for semivolatile organic compounds via USEPA Method 625, VOCs via USEPA Method 624, metals via USEPA Method 200.7 (Revision 4.4), mercury via USEPA Method 245.1, and cyanide via USEPA Method SM 4500 to comply with the permit requirements established by the POTW. Samples were collected from the terminal point of discharge at the POTW (April 16 and November 2, 2021). The POTW's effluent limitations are presented in permit number CYT-2013-101. Analytical results were in compliance with the POTW's effluent limitations (Appendix B).

4.3 System Operation and Maintenance Activities

Quarterly system inspections and maintenance were conducted in 2021. Inspections include calibration of the pH probes, inspection and cleaning of flow meters and piping in the system enclosure, collection of groundwater elevations at the extraction wells, and collection of influent and effluent system samples as discussed in Section

4.2. In 2021, routine O&M activities also included completion of a well rehabilitation (i.e., purging, surging, and brushing of the three extraction wells) and hydro-jetting event to proactively control biofouling within the system and minimize the impact of biofouling on overall system performance. These events were conducted on April 12 and April 28, 2021. Consistent with the 2020 event, hydro-jetting was conducted using a trailer-mounted pressure washer. Water, obtained from an on-site hydrant, was jetted through the subsurface piping network from the extraction well vaults toward the system enclosure and vice versa. The collected water was containerized and transported to the POTW for disposal. Jetting of the discharge lines from the system enclosure to the POTW was conducted for the first 300 feet. Jetted water was collected at the terminal point of each jetted segment. Following jetting activities, each pump was removed from its extraction well, disassembled, cleaned, and inspected. Exhibit 3, below, shows before and after the pump cleaning process at EW-02. As shown, significant buildup occurred during the 3 months of operation between pump cleaning events.

Exhibit 3. Site Photos of Pump Cleaning Impact

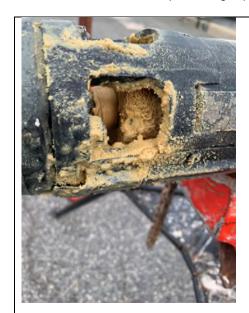


Photo 1. EW-02 pump intake before cleaning

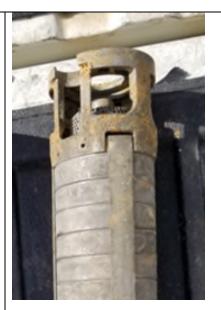


Photo 2. EW-02 pump intake after cleaning

The well rehabilitation and hydro-jetting event positively affected the overall system flow rate (the average daily rate was 4.8 gpm in February 2021, 7.3 gpm in March 2021, and 9.2 gpm in April 2021). Additionally, the monthly average flow rate at EW-02 increased from 0.9 gpm in February 2021 to 1.7 gpm in April 2021. To maintain the highest flow rate possible at EW-02, the pump is removed and replaced every quarter, or more frequently as necessary. The removed pump is disassembled and cleaned at Arcadis' Hanover, Maryland warehouse and redeployed during the next quarter. Pump cleaning and replacement will continue quarterly in 2022. Flow from the extraction wells is also optimized during quarterly site visits to maintain a pH greater than 5.0 standard units in accordance with CYT-2013-101 permit requirements.

Non-routine O&M activities, including system alarms, are presented in Table 5, and a detailed summary of all routine and non-routine O&M activities are in Appendix A. O&M activities from December 2021 were not included

in the period of performance for 2021 and will be included in the 2022 PMR. Non-routine O&M activities were more frequent in 2021; two pipe leaks occurred within the system enclosure in 2021. The leaks were repaired, returning the system to operational status. There were also additional equipment replacements and repairs conducted in 2021, including MW-10D motor replacement, EW-02 transducer replacement, and pH probe replacement. False alarms and unnecessary system inspections were reduced in 2021, as facility representatives continued to assist with inspections and resetting the system as needed. False alarms included consistent P-100 and P-200 drive fault alarms. These alarms have historically been associated with fluctuations in power supply to the system enclosure; roughly the same number of false alarms were received in 2020 and 2021.

O&M activities were reported in greater detail in monthly status reports per the discharge permit requirements established by the POTW. Monthly compliance reports submitted from January through November 2021 are provided in Appendix C. As the 2021 period of performance did not include December 2021, the compliance report for December 2021 will be provided in the 2022 PMR.

4.4 Groundwater Elevation Measurements

Water-level measurements were collected from the monitoring well network in September and October 2021 (wells MWBR-1, MW-19D1, and MW-19D2). The system was operational during the collection of these data. Water-level measurements are presented in Table 1, along with well construction details.

4.5 Performance Monitoring

Groundwater samples were collected using HydraSleeves™ on September 14 and 15, 2021 and October 29, 2021 and submitted to Eurofins TestAmerica Laboratories, located in Pittsburgh, Pennsylvania, for analysis of site-specific VOCs via USEPA Method 8260C. HydraSleeves™ were retrieved no less than 24 hours after deployment pursuant to the manufacturer's specifications. Select samples were also analyzed for MNA parameters, including sulfate via USEPA Method 300.0, total and dissolved iron via USEPA Method 6020, total organic carbon via USEPA Method 9060A, and dissolved gasses (methane, ethane, and ethene) via method AM20GAX. Dissolved gas samples were analyzed by Pace Analytical Energy Services LLC, located in Baton Rouge, Louisiana. The HydraSleeves™ were installed at the depths presented in Table 1 and in accordance with manufacturer's specifications.

Samplers were deployed at two separate depth intervals in deep overburden zone monitoring wells MW-18 and MW-23. These two wells are screened across a layer of lower permeability silt, or silt and clay. By deploying the samplers at two intervals, the difference in dissolved-phase COC concentrations above and below the silt and clay layer can be assessed.

Water quality parameters (i.e., dissolved oxygen, oxidation-reduction potential, specific conductivity, temperature, and pH) were measured downhole following retrieval of each passive sampling device. Field documentation, including equipment calibration forms, sampling forms, and chain-of-custody documents, is provided in Appendix A.

4.6 Data Validation and Usability

Arcadis personnel validated the analytical data collected during the groundwater monitoring events in accordance with USEPA Region 3 procedures (USEPA 1994, 1995) and professional judgment. Data validation included review of the laboratory report narrative for noted deficiencies and the potential impact to data usability; review of chain-of-custody documents, sample preservation, and sample receipt logs; and electronic data validation of selected quality control parameters. No major deficiencies were identified during the data validation process. Laboratory results and data validation reports are provided in Appendices D and E, respectively.

5 Performance Monitoring Results

This section presents the 2021 performance monitoring results. Groundwater sampling and gauging logs are provided in Appendix A. Laboratory analytical reports are provided in Appendix D.

5.1 Groundwater Elevations

Depth to groundwater measurements were collected from the monitoring well network between September 13 and 15, 2021. Wells MWBR-1 (gauged October 18), MW-19D1, and MW-19D2 (gauged October 27) were inaccessible during the site-wide gauging event in September and were accessed separately in October 2021. The September gauging event was conducted during a period of consistent system operation and included the collection of water level measurements at each monitoring well at the site. Results of the gauging event are presented in Table 1.

The groundwater monitoring network consists of wells screened in the shallow, intermediate, and deep water-bearing overburden zones. In addition to the 19 monitoring wells included in the performance monitoring program, depth to water measurements were collected at an additional 25 monitoring wells and three extraction wells in 2021 to better assess groundwater flow at the site. During this event, groundwater elevations in the shallow, intermediate, and deep monitoring wells ranged from 41.53 feet above mean sea level (msl) at MW-4 to 32.48 feet above msl at MW-9S; 39.30 feet above msl at MW-5D to 21.49 feet above msl at MW-15I; and 34.88 feet above msl at MW-26 to 2.33 feet above msl at MW-21, respectively.

Groundwater generally flows from west to east toward the Chesapeake Bay and this year's field measurements are generally consistent with historical interpretations of site flow regimes. Evaluation of the groundwater measurements with respect to inferred capture and horizontal hydraulic gradient influenced by the groundwater stabilization system and flow conditions are discussed in Section 6.1.2. Groundwater elevation contours are shown on Figures 4, 5, and 6.

5.2 Groundwater Analytical Results

Analytical results, including water quality parameters, are presented in Table 6. COC trends are discussed in Section 6.1.3. Groundwater analytical results for 2021 for the COCs identified at the site are summarized below:

- 1,1,2-TCA was not detected at concentrations exceeding its numerical CAO performance goal of 5 μg/L during the 2021 sampling event. A detected concentration of 1,1,2-TCA was observed in one monitoring well, with a concentration of 1.9 μg/L (MW-13D).
- 1,2-DCA was detected at concentrations exceeding its numerical CAO performance goal of 5 μg/L in six of the 19 monitoring wells during the 2021 sampling event. The highest concentration of 1,2-DCA occurred in MW-28D (1,200 D μg/L). The D qualifier indicates that the compound was detected after dilution.
- Chloroform was not detected at concentrations exceeding its numerical CAO performance goal of 0.19 μg/L during the 2021 sampling event. As previously noted, the numerical CAO performance goal for chloroform is less than the typical laboratory reporting limit (less than 1 μg/L). There were no detections greater than the THM MCL of 80 μg/L.

- Methylene chloride exceeded its numerical CAO performance goal of 5 μg/L at only one monitoring well during the 2021 sampling event (with an estimated concentration of 35 μg/L in MW-3, and a duplicate concentration of 45 μg/L). It should be noted that methylene chloride is present in the extracted groundwater effluent (see Table 4), based primarily on elevated detections in extraction well EW-02 (maximum 2021 detection of 17,000 μg/L); however, these elevated detections appear to be localized to the facility.
- TCE was not detected at concentrations exceeding its numerical CAO performance goal of 5 μg/L during the 2021 sampling event. A detected concentration of TCE was observed in three monitoring wells, and the highest concentration of TCE occurred in MW-6I (3.5 μg/L).
- VC exceeded its CAO performance goal of 2 μg/L at only one of the 19 monitoring locations sampled during the 2021 sampling event (with an estimated concentration of 59 in MW-3, and an estimated duplicate concentration of 81 μg/L).

Based on the comparison to CAO goals, the primary COC in site groundwater is 1,2-DCA. During the 2021 monitoring event, 1,2-DCA results exceeded the CAO goal in 37 percent of the samples. Furthermore, concentrations of the primary site COC, 1,2-DCA, have varied without clear trends since the last reporting period. The concentration of 1,2-DCA in EW-01 ranged from 83 μ g/L to 1,100 μ g/L in 2021, compared to 240 μ g/L to 790 μ g/L in 2020. In EW-02 the concentration of 1,2-DCA ranged from 1,800 D μ g/L to 17,000 μ g/L in 2021, compared to 2,900 μ g/L to 19,000 μ g/L in 2020. 1,2-DCA time-series results for the last five monitoring well sampling events and select extraction well sampling events are shown on Figures 7 and 8. Other COCs in samples with CAO goal exceedances include VC (5 percent), and methylene chloride (5 percent). No detections of 1,1,2-TCA, chloroform, or TCE exceeded their respective CAO goals at the performance monitoring well locations.

6 Performance Evaluation

The interim groundwater stabilization system operated from 2002 through 2014 and consisted of groundwater extraction at MW-10D and discharge to the City of Havre de Grace POTW. In January 2015, the system was expanded to recover groundwater from three additional extraction wells EW-01, EW-02, and MW-10D. The primary purpose of the groundwater stabilization system is to reduce the migration of impacted groundwater across the site property boundary in accordance with the CAOs. The system design was based on analytical modeling which was used to predict the hydraulic influence of the two additional extraction wells (EW-01 and EW-02) near the existing extraction well MW-10D. The results of the model predicted that the target pumping rates (MW-10D pumped at 6 gpm, EW-01 pumped at 3 gpm, and EW-02 pumped at 0.64 gpm) would be sufficient to control further off-site migration of impacted groundwater.

Conceptually, the implementation of the expanded groundwater stabilization system is expected to remove contaminant mass and provide hydraulic control for on-site higher COC concentration areas. In turn, maintaining hydraulic control of the higher on-site COC concentration areas is expected to simultaneously reduce the mass flux migrating off site and enhance the migration of clean water (i.e., pore flushing) toward downgradient impacted areas. Performance of the expanded groundwater stabilization system is discussed in Section 6.1, including mass removal trends (Section 6.1.1), hydraulic capture analysis (Section 6.1.2), and COC trends (Section 6.1.3).

Other processes contributing to groundwater quality improvements include the biodegradation of site COCs. Consequently, supplemental MNA parameters have been collected to better understand the site geochemistry and the potential of biodegradation to contribute to water quality improvements. These data are discussed in Section 6.2.

6.1 Groundwater Stabilization System Performance

6.1.1 Mass Removal

In 2021, 3,382,441 gallons of COC-impacted groundwater (Appendix F) were extracted by the system and discharged to the local POTW, an approximate decrease of 27 percent compared to the extracted volume reported for 2020. System extraction data for December 2021 were estimated based on the average pumping rates from October and November, extrapolated for December, as December 2021 was not part of the period of performance for this report. The three extraction wells were not operated as consistently in 2021 compared to 2020, due to several EW-02 pump issues and unforeseen equipment failures that caused protracted system shutdowns. However, routine and proactive O&M activities, including completion of a combined mechanical well rehabilitation and hydro-jetting event to clear bio fouling and scaling from well screens, routine pump and piping network cleaning, and leak repairs were completed during 2021 to maximize system operation.

As presented in Table 4, 1,2-DCA and methylene chloride concentrations in the combined effluent decreased from 16,000 and 53,000 µg/L in December 2014 (prior to operation of the system) to 5,800 and 19,000 in November 2021, respectively. 1,2-DCA and methylene chloride concentrations in the extraction wells were generally consistent during the sampling events conducted in 2021, except for EW-01 in August 2021 and MW-10D in August and November 2021. In the August 2021 sample at EW-01, 1,2-DCA and methylene chloride concentrations increased to the highest levels since 2019. In the August and November 2021 samples at

MW-10D, 1,2-DCA and methylene chloride concentrations increased to the highest levels since 2014. These transient concentration increases at the extraction wells may represent plume equilibrium or back diffusion processes occurring during shutdown periods and appear limited in extent.

Based on the 2021 results for 1,2-DCA and methylene chloride, the estimated mass removed by the system in 2021 was approximately 48 pounds of 1,2-DCA and 47 pounds of methylene chloride, resulting in a cumulative total of approximately 552 pounds of 1,2-DCA and 971 pounds of methylene chloride removed since expansion of the groundwater stabilization system (Appendix F; Figure 9). The effluent data demonstrate that the system is continuing to remove contaminant mass, thus eliminating the mass flux downgradient of the site boundary.

6.1.2 Hydraulic Capture Analysis

The target hydraulic capture zone (Figure 6) for this analysis is based on the 2014 distribution of COC-impacted groundwater (primarily groundwater impacted with 1,2-DCA) (Figure 10). This width perpendicular to groundwater flow is approximately 575 feet (ft). To account for some uncertainty in the delineation, an additional 50 ft was added (i.e., 25 ft on each side), resulting in a total width of 625 ft.

Because COCs have not been detected above CAO goals to any significant extent in the shallow overburden zone within the property boundary, the target hydraulic capture zone is restricted vertically to the intermediate and deep overburden zones with a focus primarily on the deep overburden zone.

The following sections present an evaluation of hydraulic capture at the site.

6.1.2.1 Groundwater Elevation Contours

In general, under pumping conditions the deep overburden zone contours in the vicinity of all pumping wells show moderate cones of depression indicating inward flow with a larger area of depression in the EW-01 and MW-10D area due to proximity to one another and higher flow rates (superposition). Under non-pumping conditions, the contours showed no inflection with groundwater flow generally to the east toward the Chesapeake Bay. The intermediate potentiometric surface maps developed under both pumping and non-pumping conditions have not demonstrated any discernible variation in the contours.

The deep overburden groundwater elevation contour map (Figure 6) is used to estimate the interpretive capture zone. Note, as per USEPA guidance (2008), hydraulic heads measured at extraction wells should not be used to interpret hydraulic capture and groundwater flow patterns. However, the hydraulic head local to the extraction well can be estimated by correcting the measured water-level at the extraction well for well losses based on the flow rate resulting in a higher groundwater elevation in the extraction well. As such, the groundwater elevation measured at EW-01 (24.52 ft above msl) and EW-02 (30.54 ft above msl) were corrected utilizing the Bierschenk and Hantush graphical method from historic step testing data according to USEPA guidance (2008). The resulting corrected water levels are 26.63 ft above msl at EW-01 and 30.64 ft above msl at EW-02. Step testing data were unavailable for MW-10D, so this correction method was not used. However, the corrected groundwater elevation in the vicinity of pumping well MW-10D (26.85 ft above msl) was estimated based on a drawdown of 4.15 ft and a well efficiency operation of 75 percent. The well efficiency of 75 percent was estimated based on the application of the Theis equation using the theoretical drawdown compared to the actual drawdown from hydraulic testing completed in 1999 (BBL 2000). These corrected levels were used when developing the deep overburden groundwater elevation contour map for fall 2021 (Figure 6). The interpretative capture zone based on the pumping

influence was inferred by drawing perpendicular flow lines to the fall 2021 potentiometric surface in the vicinity of the extraction wells. As shown on Figure 6, the interpretative capture zone for the groundwater stabilization system extends approximately 605 ft in width across the site and extends both north and east across the site property boundary.

Overall, deep overburden zone water-level contours show inflection due to pumping (inward flow towards the pumping wells), while intermediate overburden water-level contours indicate little horizontal hydraulic influence based on a review of the groundwater elevation contour maps. The interpreted capture zone for the deep overburden zone fully encompasses the target capture zone of the site.

6.1.2.2 Profile Flow Nets

Groundwater flow for fall 2021 (pumping conditions) was also contoured in vertical section as profile flow nets (Figures 11 through 14). The profile flow nets are generalized contours overlain on each geologic cross section (A-A' through C-C') developed by using groundwater elevations posted at the mid-point of the respective well screen. Hydrogeologic characteristics of the lithology and pumping influence were taken into consideration where possible when drawing the contours. The interpreted groundwater flow is also presented as arrows drawn perpendicular to the potentiometric contour lines. The approximate extent of current 1,2-DCA concentrations above 5 µg/L, the CAO goal, are also included on each cross section.

The dominant flow pattern observed in the profile flow nets is downward flow near the extraction wells where the potentiometric surface is greatest in the shallow and intermediate zones. The concentric patterns centered on active extraction wells (e.g., EW-01 on cross section B-B; Figure 13) indicate the influence that extraction wells have on surrounding groundwater. The central portion of cross section A-A' indicates a change from downward flow near the extraction wells on-site to upward flow at MW-14I/MW-14 (Figure 12), which is consistent with the conceptual site model.

The 1,2-DCA plume extent is primarily located around the extraction wells and within the capture zone although, as discussed in Section 6.1.4.1.2, a slug of mass is migrating downgradient beyond the capture zone of the expanded stabilization system; this slug is expected to attenuate over time.

6.1.3 Constituent of Concern Trends

Historical groundwater analytical results for site monitoring wells are provided in Appendix G. COC trend plots for select monitoring wells are provided in Appendix H. These appendices include historical groundwater sampling results since 1990. During development of the historical trend plots provided in Appendix H, it was noted that high historical 1,2-DCA detections in some samples resulted in elevated nondetect reporting limits for other COCs. To observe clear trends on the trend plots, nondetect results are plotted at the same value (1 μ g/L).

6.1.4 Fate and Transport Estimate

Concentrations of 1,2-DCA in groundwater exceed the CAO (5 ug/L) at down-gradient monitoring well MW-19D1. Fate and transport calculations were performed using deep zone hydraulic parameters (hydraulic conductivity, hydraulic gradient), 1,2-DCA concentrations, attenuation factors (degradation rate, organic carbon content), and zone characteristics (grain size, density, and porosity) to estimate the distance beyond MW-19D1 at which 1,2-DCA concentrations in groundwater become less than the CAO. Calculations were performed using recently

observed 1,2-DCA concentrations (October 2021) from MW-19D1. The average horizontal hydraulic gradient was calculated from four monitoring wells (MW-15, MW-23, MW-20, and MW-19D1) and was approximately 0.012 (ft/ft). Note that the horizontal hydraulic gradient calculation and resulting groundwater flow velocity is a conservative estimate as it assumes a constant gradient and does not take into account variation from Chesapeake Bay tidal influence. The site hydraulic conductivity (K of 30 feet per day) used in the calculations was taken from the groundwater analytical model presented in the 2019 Annual Performance Monitoring Report (Arcadis 2020a). Assuming an effective porosity of 15%, the groundwater flow velocity was estimated to be approximately 2.4 ft/day or 876 ft/year. The actual transport rate of 1,2-DCA would be less than groundwater due to retardation (Rd) factors. Based on published values for similar soil types for organic carbon and bulk density (Fetter 2001; USEPA1996, 2021), the Rd for 1,2-DCA was calculated at 1.39.

Time and distance calculations were completed based on conservative values from site-specific information and published values described above and the current concentration of 30 μ g/L at MW-19D1. The calculation result is presented below in Exhibit 4 and indicates that the 1,2-DCA concentrations will attenuate to less than the CAO of 5 μ g/L at an estimated distance of 513 feet down-gradient of MW-19D1. Thus, 1,2-DCA concentrations in well MW-19D1 will attenuate to concentrations less than the CAO before reaching the Chesapeake Bay at its closest point located approximately 632 feet down-gradient of MW-19D1.

Exhibit 4. Time and Distance Calculation Results

coc	Site-Specific CAO	Attenuation Rate	Estimated Distance to Attenuate below 1,2-DCA to CAO (ft)	
	(µg/L)	(half-life in days)	K = 30 ft/day	
1,2-DCA	5	114	513	

6.1.5 Discussion of Final Remedy Performance

The observed water-level data indicate that under pumping conditions, the deep overburden zone is hydraulically captured across the entire width of the on-site impacted area. The observation that COCs in wells downgradient of the northeastern site boundary continue to demonstrate decreasing or stable trends (i.e., MW-27, MW-18, MW-16, and MW-14) is further evidence that adequate hydraulic capture is being affected.

To maintain and enhance the operational capture zone of the groundwater stabilization system in 2022, an annual well rehabilitation and hydro-jetting event will be conducted in addition to routine pump cleaning throughout the year. Routine pipe cleaning will be conducted quarterly, or as needed based on well performance. Additionally, routine system inspections and timely leak repairs will facilitate continued system operation. Effluent samples collected during routine system inspections will be used to optimize flow rate at each extraction well. The effective hydraulic capture is continuing to improve groundwater quality at the site and eliminate contaminant mass flux downgradient of the site boundary.

It is expected that the expanded groundwater stabilization system will continue to operate until the magnitude and extent of groundwater impacts have been reduced to a point that natural attenuation processes will be sufficient to continue groundwater quality improvements to meet CAO goals. Annual performance monitoring of system operations is conducted to assess the long-term trends in response to implementation of the expanded system.

Part of these evaluations include monitoring COC trends at six POC monitoring wells (MW-3, MW-12S, MW-12D, MW-13D, MW-19D1, and MW-20D1) within and at the leading edge of the COC-impacted groundwater, as established in the PMP (Arcadis 2012a).

Seven monitoring events have been conducted since November 2014, with six events occurring after implementation of the expanded groundwater stabilization system in January 2015. Groundwater analytical results for 1,2-DCA for the last six monitoring events and concentrations first measured at each location following well installation are shown on Figures 7 and 8.

6.1.5.1 1,2-Dichloroethane

Prior to operation of the expanded system in January 2015, concentrations of 1,2-DCA greater than 100 μ g/L remained at several locations, including intermediate monitoring wells MW-6I and MW-13D and deep monitoring wells MW-3, MW-16, MW-18, MW-27, and MW-28D. As provided in Appendix H, 1,2-DCA concentrations exhibit a stable to decreasing trend in these monitoring wells following implementation of the expanded system in January 2015.

Table 7 presents the percent change in 1,2-DCA concentrations at intermediate and deep monitoring wells, calculated using historical maximum concentrations and baseline concentrations (prior to operation of the expanded system).

6.1.5.1.1 Intermediate Wells

As presented in Table 7, 1,2-DCA has exhibited a reduction of 98 percent or greater at each of the five intermediate wells when comparing 2021 concentrations to historical maximums, including on-site POC well MW-13D (greater than 99 percent reduction). Concentrations of 1,2-DCA were less than laboratory reporting limits at on-site POC well MW-12D and have exhibited a decreasing trend at off-site intermediate well MW-14I, decreasing to less than the CAO goal of 5 μ g/L from 2018 through 2021. Concentrations of 1,2-DCA, with the exception of the most recent 2021 result, have been elevated at on-site intermediate well MW-6I (average concentration of 2,258 μ g/L from operation of the expanded system in January 2015 to October 2020). The average concentration of 1,2-DCA at MW-6I including 2021 data is 1,983 μ g/L.

6.1.5.1.2 Deep Wells

1,2-DCA has exhibited a reduction of 55 percent or greater at eight of the 11 deep wells since operation of the expanded system began in January 2015: MW-3, MW-14, MW-16, MW-18, MW-20D1, MW-23, MW-27, and MW-28D. Concentrations of 1,2-DCA observed prior to operation of the expanded system and in September 2021 were less than laboratory reporting limits in MW-8D and less than 1 μ g/L in downgradient monitoring well MW-20D1.

Results from 2021 indicate:

1,2-DCA concentrations similar to 2020 results were observed at off-site deep monitoring wells MW-19D1 and MW-23, and concentrations remained greater than the CAO goal of 5 μg/L in both wells; prior to 2018, these wells generally demonstrated a decreasing or stable trend. At MW-19D1, concentrations of 1,2-DCA were less than the CAO goal of 5 μg/L in November 2014 (3.0 μg/L), June 2015 (1.6 μg/L), November 2015

(1.9 μ g/L), and October 2017 (2.8 μ g/L). Concentrations of 1,2-DCA at MW-19D1 have been stable since 2018.

- At the lower sample interval of MW-23, concentrations of 1,2-DCA were also generally stable or declining from November 2014 (56 μg/L) to November 2018 (15 μg/L), with a slow increasing trend starting in September 2019 (19 μg/L). The concentration detected in September 2021 (14 μg/L) was lower than the concentration in October 2020 (27 μg/L).
- Analytical results observed in 2021 were generally consistent with 2020 results. It is believed that a slug of
 mass is migrating downgradient beyond the capture zone of the expanded stabilization system and
 concentrations of 1,2-DCA at these locations will attenuate (reduce) through time. Although concentrations
 remain greater than the CAO goal of 5 μg/L at five of the 11 deep wells, generally decreasing trends are
 evident at most of these locations.

6.1.5.1.3 Point of Compliance Wells

At three POC locations (MW-12S, MW-12D, and MW-20D1), COC concentrations were less than their respective CAO goals for each COC. In 2019 and 2021, 1,2-DCA was detected at concentrations exceeding the CAO goal of 5 μ g/L in MW-13D, but concentrations declined in 2020. At on-site POC monitoring well MW-3, 1,2-DCA was detected at a concentration exceeding the CAO goal of 5 μ g/L in 2021 (41 J μ g/L). MW-3 is located at the former UST tank farm in the southern corner of the site. In downgradient POC well MW-19D1, concentrations of 1,2-DCA also exceeded the CAO goal of 5 μ g/L in 2021 (30 μ g/L), consistent with 2020 results (31 μ g/L). Concentrations of 1,2-DCA at MW-19D1 have been stable since 2018.

6.1.5.2 Methylene Chloride

In MW-3, methylene chloride (35 J μ g/L) was also greater than its CAO goal of 5 μ g/L and less than its historical peak concentration in October 1997 (15,000 μ g/L). Methylene chloride was also detected in 2019 (38 μ g/L) and 2020 (53 μ g/L). In September 2021, the maximum detected concentration of methylene chloride in downgradient extraction well EW-02 was 3,200 μ g/L. In 2021, methylene chloride was not detected in any of the other monitoring wells identified in the PMP (Arcadis 2012a). Groundwater samples will continue to be collected from performance monitoring wells, including MW-3, and analyzed for methylene chloride to further evaluate the isolated detections observed to date.

6.1.5.3 Other Constituents of Concern

In general, concentrations of other COCs have remained stable or decreased following implementation of the expanded groundwater stabilization system in January 2015; exceptions include the presence of increasing VC in MW-3 (concentrations increased from 17 to 190 μ g/L between 2017 and 2020 but dropped to 59 J μ g/L in 2021).

6.2 Monitored Natural Attenuation Assessment

This section discusses off-site and downgradient MNA conditions, with a focus on the biodegradation potential of groundwater COCs and current groundwater redox conditions. In addition, this section discusses the extent to which biodegradation is occurring based on the established redox conditions, COC trends, and/or presence of degradation products.

To support this evaluation, current biogeochemical data are presented in Table 6. In addition, a bar chart figure showing the ratios of COC compounds, advanced degradation products (ethene and ethane), and redox indicators (iron, sulfate, methane) is shown on Figure 15. The current COC detections were reviewed as a screening step to determine the dominant COCs in downgradient areas. The only COC widely detected in the off-site monitoring well network was 1,2-DCA. Since implementation of the PMP (Arcadis 2012a), the highest off-site concentration of 1,2-DCA has been observed in MW-27, located approximately 100 feet beyond the northeast facility boundary. As provided in Appendix H, Figure H-16, 1,2-DCA concentrations in MW-27 decreased from 12,000 μ g/L (December 2006) to nondetect or <1 μ g/L (September 2021) and represent a downward trend. In 2021, 1,2-DCA also exceeded its CAO goal of 5 μ g/L at the upper and lower intervals of MW-23 (13/14 μ g/L), and downgradient POC well MW-19D1 (30 μ g/L). No other COCs were detected at concentrations greater than CAO goals in off-site monitoring wells.

Several known biotic and abiotic processes can potentially contribute to the natural attenuation of 1,2-DCA. Aerobic oxidation is a microbial process where 1,2-DCA is used as a carbon source either solely or through cometabolic reactions. When used as a sole carbon source, chloroethanol is formed as an intermediate metabolite and is then mineralized to carbon dioxide and water. With biotic reductive dechlorination, 1,2-DCA is sequentially degraded to chloroethane and ethane under anaerobic and reducing conditions. Hydrolysis of 1,2-DCA is slow and not a significant abiotic attenuation process. However, the reported half-life for chloroethane (a 1,2-DCA degradation product) via hydrolysis is faster, ranging from days to months. Biogeochemical reductive dechlorination is also a potential abiotic degradation process. Under iron- and sulfate-reducing conditions, surface reactions with the iron sulfide precipitates can degrade 1,2-DCA.

As presented in Table 6, select wells including on-site monitoring well MW-3 and off-site monitoring wells MW-14I, MW-16, MW-19D1, MW-20D1, MW-23, and MW-27 were analyzed for natural attenuation parameters, including sulfate, total and dissolved iron, TOC, and dissolved gasses (methane, ethane, and ethene). The biogeochemical data collected indicate that the redox conditions ranged from mildly to strongly reducing. The majority of the monitoring wells sampled for natural attenuation parameters exhibited elevated dissolved iron concentrations. One on-site well (MW-3), several wells immediately downgradient of the site boundary (MW-14I, MW-16, and MW-27), and downgradient POC well MW-19D1 exhibited low, but elevated, methane detections typically greater than background levels. Methane was also detected in downgradient monitoring well MW-20D1 at a concentration of 120 μ g/L. The advanced degradation product, ethene, was detected at significant concentrations (greater than 100 μ g/L) in MW-27 from 2014 to 2019 and remained at this location in 2021 (760 μ g/L). The presence of these compounds suggests that 1,2-DCA and TCE are readily attenuating in MW-3, MW-14I, MW-16, MW-19D1, MW-20D1, and MW-27. These processes are contributing to mass destruction.

7 Summary and Conclusion

Overall, a combination of on-site mass removal, mass flux reductions, and natural attenuation processes continue to improve groundwater quality on site and off site, and COC trends continue to demonstrate significant groundwater quality improvements since expansion of the groundwater stabilization system in 2015. A comparison of 1,2-DCA isoconcentration plume contours between 2014 and 2021 (as depicted on Figure 10), shows the plume footprint shrinking, with a portion of the off-site plume moving toward the northeast since expansion of the groundwater stabilization system in 2015. There are no known locations with sensitive receptors downgradient of the plume (e.g., schools, hospitals), and the Chesapeake Bay at its closest point is approximately 632 feet from the northern edge of the plume. The groundwater use restriction area encompasses the portion of the plume moving to the northeast, as shown on Figure 2, which will be transmitted to the Harford County Health Department, City of Havre de Grace Planning and Zoning Department, and the POTW later this year per the site's Institutional and Engineering Control Plan.

Six monitoring wells were identified for POC monitoring (MW-3, MW-12S, MW-12D, MW-13D, MW-19D1, and MW-20D1) during active operation of the groundwater stabilization system. Annual COC sampling results from 2021 are summarized below:

- At three POC locations (MW-12S, MW-12D, and MW-20D1), COC concentrations are less than their respective CAO goals.
- At on-site POC monitoring well MW-3, 1,2-DCA, methylene chloride, and VC were detected at concentrations exceeding their CAO goal of 5 µg/L.
- At downgradient POC well MW-19D1, the concentration of 1,2-DCA also exceeded the CAO goal of 5 μg/L in 2021 (30 μg/L), consistent with 2020 results. 1,2-DCA concentrations at this location remained less than the CAO goal of 5 μg/L between 2014 and 2017. Current concentrations of 1,2-DCA (30 μg/L) at MW-19D1 are less than the historical maximum value (390 μg/L in 2000) and have been generally stable since 2018 ranging from 26 to 31 μg/L. It is believed that concentrations of 1,2-DCA will attenuate (reduce) through time at this location. This is further supported by the dramatic reduction in COC concentrations at off-site monitoring well MW-27 (no COCs detected greater than their respective CAO goals in 2021) since the expansion of the groundwater stabilization system in 2015.
- At MW-3, methylene chloride (35 J μg/L, duplicate value of 45 μg/L) was also greater than its CAO goal of 5 μg/L. Historically, MW-3 was one of the more impacted wells on site and concentrations have decreased several orders of magnitude through the last 16 years.
- In general, concentrations of the other COCs have remained stable or decreased following implementation of the expanded groundwater stabilization system in January 2015. Exceptions include the presence of increasing VC in MW-3 (although the 2021 concentration was less than the 2020 concentration) due to natural attenuation processes.
- The only COC widely detected in the off-site monitoring well network was 1,2-DCA. Since implementation of the PMP (Arcadis 2012a) the highest off-site concentration of 1,2-DCA has been observed in MW-27. As provided in Appendix H, Figure H-16, 1,2-DCA concentrations in MW-27 decreased from 5,900 μg/L (June 2005) to nondetect (September 2021).

Concentrations of 1,2-DCA greater than 100 μg/L remained at one location (MW-28D). 1,2-DCA concentrations exhibit an overall declining trend in MW-28D, with a concentration increase from 450 D μg/L in 2020 to 1,200 D μg/L in 2021.

Groundwater samples from select monitoring wells are analyzed for biogeochemical parameters and degradation products to assess the biodegradation potential of groundwater COCs and current groundwater redox conditions. Biogeochemical sample results from 2021 are summarized below:

- The biogeochemical data collected to date indicate that the redox conditions range from mildly to strongly reducing.
- Wells MW-3, MW-14I, MW-16, MW-19D1, and MW-27 exhibited low, but elevated, methane detections
 typically higher than background levels, ranging from 53 to 91 μg/L. Methane was also detected in
 downgradient monitoring well MW-20D1 (120 μg/L).
- An advanced degradation product (ethene) was detected at significant concentrations (greater than 100 μg/L) in MW-27 from 2014 to 2021.

The presence of these compounds suggests that COCs are readily attenuating in MW-3, MW-14I, MW-16, MW-19D1, MW-20D1, and MW-27. These processes are contributing to mass destruction.

Conservative fate and transport calculations were completed for 1,2-DCA to estimate the distance down-gradient that 1,2-DCA concentrations in groundwater become less than the CAO (5 µg/L). The results indicate that 1,2-DCA concentrations in well MW-19D1 will attenuate to concentrations less than the CAO before reaching the Chesapeake Bay at its closest point located approximately 632 feet down-gradient from MW-19D1.

The groundwater stabilization system operated continuously with an overall uptime of 76 percent from January to November 2021. The most significant downtime occurred in July/August 2021 due to a pump issue at MW-10D (motor overload). Repairs were completed on August 16, 2021 when the motor and motor lead at MW-10D were replaced and the system was returned to operational status. While biofouling of the well screens, pump motors, and subsurface piping network continue to hinder system performance, routine and proactive O&M activities conducted in 2021 optimized overall system performance, similar to 2020.

The observed water-level data indicate that under pumping conditions, the deep overburden zone is hydraulically captured across the entire width of the on-site impacted area. Moreover, the observation that COCs in wells downgradient of the northeastern site boundary continue to demonstrate decreasing or stable trends (i.e., MW-27, MW-18, MW-16, and MW-14) is further evidence that adequate hydraulic capture is being affected.

To maintain the operational capture zone of the groundwater stabilization system in 2022, an annual well rehabilitation and hydro-jetting event will be conducted in addition to routine pump cleaning throughout the year. Routine pipe cleaning will be conducted quarterly, or as needed based on well performance. Additionally, routine system inspections and timely leak repairs will ensure continued system operation. Effluent samples collected during routine system inspections will be used to optimize flow rate at the three extraction wells.

8 Path Forward

The following activities are planned:

- Continue operation of the groundwater stabilization system to maintain groundwater capture. The PMP
 (Arcadis 2012a) states that the groundwater stabilization system will operate for at least 15 years (2015
 through 2030). The seventh year of operation was performed in 2021.
- Perform annual extraction well rehabilitation to maintain well and pump performance.
- Collect and analyze of biogeochemical parameters (ethane, ethene, methane, sulfate, total and dissolved iron, and total organic carbon) at MW-28D, the location with the highest current COC concentrations.
- Use new USEPA validation protocols (November 2020 update to the National Functional Guidelines), which were published after validation of this year's samples was initiated.

Following the collection of 10 years of performance monitoring data, an additional statistical trend analysis will be conducted in 2024. Results of the statistical analysis will be used to modify the monitoring program and assess long-term trends in response to continued implementation of the expanded system.

9 References

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Tables



		Top of Cooling	Cround	Screened Interval		Screened Interval		Passive Sampler ²		September 13, 2021 ⁴	
Well ID ¹	On Site/ Off Site	Top of Casing Elevation (feet amsl)	Ground Elevation (feet amsl)	Top (feet bgs)	Bottom (feet bgs)	Top (feet amsl)	Bottom (feet amsl)	Sampler Depth (feet bgs)	Sampler Elevation (feet amsl)	Depth to Groundwater (feet btic)	GW Elevation (feet amsl)
Shallow Ove	rburden										
MW-4	On Site	46.4	46.95	5	15	41.95	31.95	12.0	35.0	4.87	41.53
MW-5	On Site	49.7	50.33	4.4	14.4	45.33	35.33	NS	NS	9.63	40.07
MW-6	On Site	50.93	51.33	3	16	48.33	35.33	NS	NS	11.64	39.29
MW-7	On Site	44.67	44.78	2.9	17.9	41.78	26.78	NS	NS	7.51	37.16
MW-8S	On Site	41.02	41.6	9	19	32.6	22.6	16.0	25.6	4.74	36.28
MW-9S	On Site	42.02	42.08	9.9	19.9	32.08	22.08	17.5	24.6	9.54	32.48
MW-10S	On Site	44.79	45.04	10	20	35.04	25.04	11.0	34.0	6.37 ⁶	38.42
MW-11S	On Site	44.28	44.51	9.8	19.8	34.51	24.51	NS	NS	5.56	38.72
MW-12S	On Site	49.62	49.71	8	18	41.71	31.71	15.0	34.7	8.28	41.34
Shallow and	Intermediate	Overburden	•	•	•	•	•				
MW-1A	On Site	46.8	45.2	3.6	21.6	43.2	25.2	NS	NS	9.72	37.07
MW-2	On Site	47.4	44.8	4.6	23.1	42.8	24.3	NS	NS	6.14	41.27
Intermediate	Overburden										
MW-5D	On Site	48.55	48.93	14.2	24.2	34.33	24.33	NS	NS	9.25	39.30
MW-6I	On Site	50.2	50.55	21.65	27.65	28.55	22.55	26.5	24.1	12.90	37.30
MW-12D	On Site	49.41	49.7	18	28	31.7	21.7	26.5	23.2	14.72	34.69
MW-13S	On Site	50.81	NA	10	20	41.01	31.01	NS	NS NS	11.74	39.07
MW-13D	On Site	50.79	51	22	32	29	19	29.5	21.5	12.09	38.70
MW-14I	Off Site	35.8	35.98	16	26	19.98	9.98	23.0	13.0	13.77	22.03
MW-15I	Off Site	34.99	35.36	12.6	22.6	22.36	12.36	NS	NS	13.50	21.49
MW-22S	On Site	44.13	44.43	7	17	37.43	27.43	NS	NS	Dry	N/A
MW-24	On Site	48.71	49.14	19.75	27.75	29.39	21.39	NS	NS	10.40 ⁶	38.31
MW-25I	On Site	49.54	49.94	20	30	29.94	19.94	28.5	21.4	14.85	34.69
	and Deep O										
MW-28D	On Site	49.14	49.41	27.5	42.5	21.91	6.91	30.0	19.4	16.03	33.11
		45.14	49.41	27.5	42.5	21.91	0.91	30.0	19.4	10.03	33.11
Deep Overbu		40.44	40.00	40	45	0.00	4.00	NO	NO	04.00	04.50
EW-01 ³	On Site	46.14	49.29	40	45	9.29	4.29	NS	NS	21.62	24.52
EW-02 ³	On Site	41.9	44.9	24	32	20.9	12.9	NS	NS	11.36	30.54
MW-10D ³	On Site	45.16	45.82	29.2	39.2	16.9	6.9	NS 27.0	NS	15.16	30.00
MW-6D	On Site	45.39	44.99	34.5	40	10.49	4.99	37.0	8.0 NS	12.78	32.61
MW-8D	On Site	50.34 41.19	50.65 41.36	31.3	41.3	19.35 11.36	9.35	NS 35.0	6.4	17.49 9.14	32.85 32.05
MW-9D	On Site	41.19	42.07	22.8	33.5	19.07	8.36	NS	NS	10.83	31.07
MW-11D ⁵	On Site	44.53	44.71	29.8	39.8	14.71	4.71	NS	NS	13.68	30.85
MW-14	Off Site	36.43	36.83	29.0	36	10.83	0.83	35.0	1.8	11.08	25.35
MW-15	Off Site	35.32	35.67	22	32	13.67	3.67	NS	NS	12.62	22.70
MW-16 ⁵	Off Site	38.17	38.19	27	37	11.19	1.19	30.0	8.2	12.21	25.96
MW-17	Off Site	39.83	40.12	5.3	10.3	34.52	29.52	NS	NS	6.22	33.61
11	Off Site	30.03	10.12	0.0	10.0	5 1.0Z	20.02	24	14.67		00.01
MW-18	Off Site	38.37	38.67	22.5	32.5	16.17	6.17	31	7.67	9.33	29.04
MW-19D1	Off Site	29.26	29.53	34	44	-4.47	-14.47	39.0	-9.5	25.31	3.95
MW-19D1	Off Site	29.21	25.94	64	74	-38.06	-48.06	NS	NS	25.35	3.86
MW-20D1	Off Site	25.66	25.87	37	47	-11.13	-21.13	40.0	-14.1	23.24	2.42
MW-20D2	Off Site	25.64	25.94	85	95	-59.06	-69.06	NS	NS	23.12	2.52
MW-21	Off Site	33.84	34.13	36	46	-1.87	-11.87	NS	NS	31.51	2.33
MW-22D	Off Site	44.32	44.51	27.5	37.5	17.01	7.01	32.0	12.5	11.33	32.99
	Off Site							40	6.3		
MW-23	Off Site	45.96	46.3	39.4	49.4	6.9	-3.1	47	-0.7	35.75	10.21
MW-25	On Site	49.42	49.9	30	40	19.9	9.9	NS	NS	15.36	34.06
MW-26	On Site	47.24	47.56	29.3	39.3	18.26	8.26	NS	NS	12.36	34.88
MW-27 ⁵	Off Site	43.07	43.27	23.95	33.95	19.12	9.12	41.5	1.8	11.34	31.73
Bedrock MWBR-1	On Sita	15.69	45.93	//2 Q	52.0	1 02	-9.07	NIC	NIC	13.00	32.68
MWBR-1	On Site	45.68		43.8	53.8	1.93	-8.07	NS NS	NS	13.00	
MWBR-2	On Site	45.27	45.51	57.8	77.8	-12.49	-32.49	NS NS	NS NS	13.68	31.59
MWBR-3	On Site	42.39	42.64	79.8	99.8	-37.36	-57.36	NS NS	NS NS	10.50	31.89
MWBR-4	On Site	46.01	46.28	92.7	116.7	-46.72	-70.72	NS	NS	13.65	32.36

1 Rows highlighted yellow indicate a monitoring location that is sampled annually as part of the Performance Monitoring Plan (Arcadis 2012). MW-6 and MW-15 were removed from the sampling program in 2020.

² Groundwater samples were collected using in-situ HydraSleeve™ samplers. Deployment depths are measured from the ground surface to the mid-point of the samplers.

bgs = below ground surface

btic = below top of inner casing

amsl = above mean sea level

N/A = not applicable/no information

NS = not sampled

References:

Arcadis. 2012. Performance Monitoring Plan. Cytec Engineered Materials Facility. Havre de Grace, Maryland (USEPA ID# MDD003075942). March. Arcadis. 2018. 2017 Annual Groundwater Performance Monitoring Report. Cytec Solvay Group. Havre de Grace, Maryland (USEPA ID# MDD003075942). February.

³ Active extraction wells include EW-01, EW-02, and MW-10D. Extraction well groundwater elevations were corrected for well losses and reflected results are described in Appendix F and shown on supporting figures.

⁴ Gauging was conducted during a period of consistent system operation between September 13 - 15, 2021. In October 2021, three additional wells that were inaccessible in September were gauged: wells MW-19D1, MW-19D2 (October 27, 2021) and MWBR-1 (October 18, 2021).

⁵ Based on the refinement of the conceptual site model presented in the 2017 Annual Groundwater Performance Monitoring Report (Arcadis 2018) and following regulatory concurrence, MW-11D, MW-16, and MW-27 were reclassified from intermediate overburden wells to deep overburden wells in 2018.

⁶ Depth to groundwater is considered anomalous and will be confirmed on December 9, 2021. Well condition will be inspected during the next sampling event. Acronyms and Abbreviations:





Well ID	Purpose	Monitoring Parameters ^{1,2,3}						
Shallow Overburden Zone								
MW-4	Plume Evaluation	COCs						
MW-8S	Plume Evaluation	COCs						
MW-12S	Point of Compliance - Site Boundary	COCs						
Intermediate Overburden Zo	one							
MW-6I	Plume Evaluation	COCs						
MW-12D	Point of Compliance - Site Boundary	COCs						
MW-13D	Point of Compliance - Site Boundary	COCs						
MW-14I	Plume Evaluation	COCs, MNA						
MW-25I	Plume Evaluation	COCs						
Intermediate and Deep Overburden Zone								
MW-28D	Plume Evaluation	COCs						
Deep Overburden Zone								
MW-3	Point of Compliance - Site Boundary	COCs, MNA						
MW-8D	Plume Evaluation	COCs						
MW-14	Plume Evaluation	COCs						
MW-16 ⁴	Plume Evaluation	COCs, MNA						
MW-18	Plume Evaluation	COCs, MNA						
MW-19D1	Point of Compliance - Downgradient Edge	COCs, MNA						
MW-20D1	Point of Compliance - Downgradient Edge	COCs, MNA						
MW-22D	Plume Evaluation	COCs						
MW-23	Plume Evaluation	COCs, MNA						
MW-27 ⁴	Plume Evaluation	COCs, MNA						

References:

Arcadis. 2012. Performance Monitoring Plan. Cytec Engineered Materials Facility. Havre de Grace, Maryland (USEPA ID# MDD003075942). March.

Arcadis. 2018. 2017 Annual Groundwater Performance Monitoring Report. Cytec Solvay Group. Havre de Grace, Maryland (USEPA ID# MDD003075942). February.

¹ In addition to the parameters identified in the table, groundwater elevation measurements and field parameters (i.e., pH, specific conductivity, oxidation-reduction potential, temperature, and dissolved oxygen) are also collected during each performance monitoring event.

² Constituents of concern (COCs) consist of the following volatile organic compounds: chloroform, 1,2-dichloroethane, methylene chloride, trichloroethene, 1,1,2-trichloroethane, and vinyl chloride. In addition to the COCs, groundwater samples are also analyzed for the degradation products: chloroethane and cis-1,2-dichloroethene.

³ Monitored natural attenuation (MNA) parameters consist of total organic carbon, sulfate, total/dissolved iron, dissolved gases (methane, ethane, and ethene).

⁴ Based on the refinement of the conceptual site model presented in the 2017 Annual Groundwater Performance Monitoring Report (Arcadis 2018) and following regulatory concurrence, MW-11D, MW-16, and MW-27 were reclassified from intermediate overburden wells to deep overburden wells in 2018. It should be noted that MW-11D is not sampled as part of the Performance Monitoring Plan (Arcadis 2012) monitoring well network.





Constituent of Concern	Numerical CAO Goal ¹ (μg/L)
1,1,2-Trichloroethane	5
1,2-Dichloroethane	5
Chloroform	0.19 ^{2,3}
Methylene Chloride	5
Tetrachloroethene ⁴	5
Trichloroethene	5
Vinyl Chloride	2
Carbon Disulfide ⁴	1,000

¹ Numerical corrective action objective (CAO) goals are equivalent to maximum contaminant levels (MCLs) set by the United States Environmental Protection Agency (USEPA).

² The established numerical CAO goal is equivalent to USEPA risk-based screening levels for tapwater.

 $^{^3}$ Chloroform is classified as a trihalomethane; the MCL for trihalomethane is 80 micrograms per liter (μ g/L).

⁴ PCE and carbon disulfide were removed from the monitoring program in 2016.





Sample Date	1,2-Dichloroethane (µg/L)	Methylene Chloride (µg/L)		
Extraction Well EW-01				
1/9/2014	3,700	ND		
12/30/2014	1,900	33		
3/12/2018	1,600	78		
10/11/2018	580	ND		
1/31/2019	940	ND		
4/15/2019	900	ND		
9/5/2019	910	ND		
12/6/2019	540 E	ND		
1/21/2020	790	ND		
5/18/2020	270	ND		
7/28/2020	550	ND F2		
10/29/2020	240	ND		
3/9/2021	820	ND		
8/26/2021	1,100 D	500 D		
9/15/2021	83 HD	ND		
11/2/2021	380 D	10		
Extraction Well EW-02				
1/9/2014	250,000	450,000		
12/30/2014	79,000	260,000		
3/12/2018	15,000	23,000		
10/11/2018	18,000	49,000		
1/31/2019	12,000	22,000		
4/15/2019	13,000	12,000		
9/5/2019	21,000	38,000		
1/21/2020	19,000	34,000		
5/18/2020	4,900	3,000		
7/28/2020	NS	NS		
10/29/2020	2,900	710		
3/9/2021	9,000	13,000		
8/26/2021	17,000 D	10,000 HD		
9/15/2021	1,800 HD	3,200 HD		
11/2/2021	4, 700 D	17,000 D		





Sample Date	1,2-Dichloroethane (µg/L)	Methylene Chloride (μg/L)
Extraction Well MW-10D		
1/9/2014	NA	N/A
3/12/2018	11	ND
10/11/2018	5.7	ND
1/31/2019	1.5	ND
4/15/2019	6.6	ND
9/5/2019	1.2	ND
12/6/2019	1.9	ND
1/21/2020	6.6	ND
5/18/2020	3.7	ND
7/28/2020	4.6	ND
10/29/2020	3.5	ND
3/9/2021	2.4	ND
8/26/2021	83	110
9/15/2021	1 HD	ND
11/2/2021	290 D	59 D
Effluent		
12/30/2014	16,000	53,000
3/12/2018	3,600	5,200
10/11/2018	2,700	960
1/31/2019	1,200	1,400
4/15/2019	710	500
9/5/2019	7,600	13,000
10/10/2019	240	ND
12/6/2019	57	ND
1/21/2020	4,600	9,000
5/18/2020	ND	ND
7/28/2020	37	ND
10/12/2020	370 D	230 D
3/9/2021	1,700	2,700
8/26/2021	4,000 D	15,000 D
9/15/2021	600 HD	ND
11/2/2021	5,800 F	19,000 D

System samples are collected while the system is running.

Acronyms and Abbreviations:

N/A = not applicable/no information

ND = nondetect

NS = not sampled

μg/L = microgram per liter

Qualifiers:

D = quantified in a secondary dilution (lab qualifier)

E = Results exceeded calibration range.

F2 = Matrix spike/matrix spike duplicate relative percent difference exceeds control limits.

H= Sample was prepped or analyzed beyond the specified holding time





Date	Daily Total Flow (Gallons)	Operational Days	Summary of System Maintenance
January 2021	377,473	31	The EW-02 pump was cleaned and replaced on 1/26/21.
February 2021	192,739	16	On 2/3/21, Arcadis staff were on site to conduct routine operation and maintenance (O&M), including replacing pump at EW-02. Multiple leaks were identified in the system enclosure; leaked water was collected in the floor drain within the system enclosure that drains back to MW-10D. Arcadis staff replaced leaking parts of system on 2/17/21 and restarted the system.
March 2021	327,760	23	Routine O&M conducted on 3/9/21. Multiple erroneous leak alarms received in March.
April 2021	396,643	30	The EW-02 pump was cleaned and replaced on 4/12/21. Routine O&M conducted, including pipe jetting and well rehabilitation.
May 2021	408,611	30	Multiple E-stop/drive fault alarms received in May.
June 2021	243,279	19	The EW-02 pump was cleaned and replaced on 6/3/21. On 6/5/21, a T-401 high level alarm was received. Arcadis staff responded to this alarm on 6/14/2021 and 6/17/2021 and changed the orientation of the valve to stop the leak and restart the system.
July 2021	98,631	10	On 7/7/21, an EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted on 7/8/2021. A faulty sensor was replaced at EW-02 to clear this alarm. On 7/9/21, an MW-10D transducer failure alarm was received, indicating the motor at MW-10D had failed. Replacement equipment, including pump motor and motor lead, was required to repair and restart the system. The system was left off until the replacement parts were available. Arcadis staff responded to the site on 8/16/2021 to repair and restart the system.
August 2021	210,250	16	One drive fault alarm received.
September 2021	297,500	28	Multiple E-stop/drive fault alarms and a low pH alarm received in September.
October 2021	275,860	27	The EW-02 pump was cleaned and replaced on 10/18/21. On 10/22/21, an EW-02 transducer failure alarm was received and the system was automatically shut down. This alarm occurred due to a faulty transducer in the EW-02 well. This transducer was removed from the well on 10/27/2021 for repairs and will be reinstalled with a repaired transducer received from manufacturer.
November 2021	274,168	23	Multiple E-Stop/drive fault alarms received in November. Routine O&M conducted, including pump cleaning at MW-10D.

Table 6
Groundwater Analytical Results
2021 Annual Groundwater Performance Monitoring Report
1300 Revolution Street
Havre de Grace, Maryland



		Location ID: Sampler Date: erval (feet amsl):	MW-3 09/14/21 10.49 to 4.99	MW-4 09/14/21 41.95 to 31.95	MW-6I 09/14/21 28.55 to 22.55	MW-8D 09/14/21 11.36 to 1.36	MW-8S 09/14/21 31.7 to 21.7	MW-12D 09/14/21 31.7 to 21.7	MW-12S 09/14/21 41.71 to 31.71	MW-13D 09/14/21 29 to 19	MW-14 09/14/21 10.83 to 0.83	MW-14I 09/14/21 19.98 to 9.98
		ation (feet amsl):	7.99	34.95	24.05	25.6	23.2	23.2	34.71	21.5	1.83	12.98
COCs	Units	CAO Goal ¹							,			
1,1,2-Trichloroethane	μg/L	5	1.0 U [1.0 U]	1.0 U	2.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.9	1.0 U	1.0 U
1,2-Dichloroethane	μg/L	5	41 J [38]	1.0 U	52	1.0 UJ	1.0 U [1.0 U]	1.0 U	1.0 U	16	1.0 UJ	4.4
Chloroform	μg/L	0.19	10 UJ [2.0 U]	1.0 U	2.0 U	1.0 UJ	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Methylene Chloride	μg/L	5	35 J [45]	1.0 U	2.0 U	1.0 UJ	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Trichloroethene	μg/L	5	10 UJ [2.3]	1.0 U	3.5	1.0 UJ	1.0 U [1.0 U]	1.0 U	1.0 U	2.8	1.0 UJ	1.0 U
Vinyl Chloride	μg/L	2	59 J[81 DJ]	1.0 U	2.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Water Quality Parameters ²												
Dissolved Oxygen	mg/L		7.01	0.83	1.45	1.84	1.08	2.26	0.88	1.50	1.83	3.04
Oxidation-Reduction Potential	mV		108.2	-16.5	25.9	27.5	48.3	124.7	93.1	189.2	81.2	93.0
Specific Conductivity	μS/cm		0.365	0.274	0.515	0.178	0.909	0.813	1.525	0.294	0.115	0.385
Temperature	°C		17.15	23.90	19.60	21.18	24.25	17.87	14.34	18.15	17.85	19.45
рН	S.U.		9.44	7.09	9.51	7.42	8.01	6.00	6.72	4.61	6.83	7.36
Monitored Natural Attenuati	on Parameter	S										
Chloroethane	μg/L		10 U [2.0 U]	NA	NA	NA	1.0 U [1.0 U]	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	μg/L		10 UJ [2.0 U]	NA	NA	NA	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Ethane	μg/L		1.5 [1.8]	NA	NA	NA	NA	NA	NA	NA	NA	0.48 J
Ethene	μg/L		20 [32]	NA	NA	NA	NA	NA	NA	NA	NA	0.24 U
Methane	μg/L		53 [59]	NA	NA	NA	NA	NA	NA	NA	NA	72
Sulfate	mg/L		1.4 [2.0]	NA	NA	NA	NA	NA	NA	NA	NA	53
Iron, Total	μg/L		3,900 [4,500]	NA	NA	NA	NA	NA	NA	NA	NA	47,000
Iron, Dissolved	μg/L		50 U [50 U]	NA	NA	NA	NA	NA	NA	NA	NA	19,000
Total Organic Carbon	mg/L		0.94 J [1.3]	NA	NA	NA	NA	NA	NA	NA	NA	1.6

Table 6
Groundwater Analytical Results
2021 Annual Groundwater Performance Monitoring Report
1300 Revolution Street
Havre de Grace, Maryland



		Location ID: Sampler Date:	MW-16 09/14/21	MW-18 (24) 09/14/21	MW-18 (31) 09/14/21	MW-19D1 10/29/21	MW-20D1 09/15/21	MW-22D 09/14/21	MW-23 (40) 09/15/21	MW-23 (47) 09/15/21	MW-25I 09/14/21	MW-27 09/15/21	MW-28D 09/14/21
	Screened Int	erval (feet amsl):	11.19 to 1.19	16.17 to 6.17	16.17 to 6.17	-4.47 to -14.47	-11.13 to -21.13	17.01 to 7.01	6.9 to -3.1	6.9 to -3.1	29.94 to 19.94	19.12 to 9.12	21.91 to 6.91
Passive	Sampler Elev	ation (feet amsl):	8.19	7.67	14.67	-9.47	-14.13	12.51	6.3	-0.7	21.44	1.77	19.41
COCs	Units	CAO Goal ¹											
1,1,2-Trichloroethane	μg/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 UJ
1,2-Dichloroethane	μg/L	5	1.0 UJ	0.82 J	1.1	30	1.0 U	0.59 J	13	14	2.7 J	1.0 UJ	1,200 D
Chloroform	μg/L	0.19	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	5.0 U
Methylene Chloride	μg/L	5	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	5.0 UJ
Trichloroethene	μg/L	5	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7 J	1.0 UJ	5.0 UJ
Vinyl Chloride	μg/L	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	5.0 U
Water Quality Parameters ²													
Dissolved Oxygen	mg/L		5.07	1.41	1.41	8.40	6.51	6.40	3.69	3.69	1.40	4.05	3.59
Oxidation-Reduction Potential	mV		84.5	75.7	75.7	226	105.6	58.7	132.7	132.7	124.3	96.2	135.4
Specific Conductivity	μS/cm		0.231	0.408	0.408	0.227	0.118	0.218	0.237	0.237	0.530	0.046	0.200
Temperature	°C		15.47	19.19	19.19	15.12	15.11	16.30	15.26	15.26	18.43	18.05	18.15
рН	S.U.		8.17	9.15	9.15	6.12	8.30	8.30	7.63	7.63	6.12	8.76	5.38
Monitored Natural Attenuat	ion Parameter	S											
Chloroethane	μg/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
cis-1,2-Dichloroethene	μg/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Ethane	μg/L		7.8	0.17 U	0.17 U	2.4	0.17 U	NA	0.52 J	0.85 J	NA	0.45 J	NA
Ethene	μg/L		1.0	0.24 U	0.24 U	0.24 U	0.35 J	NA	0.26 J	0.24 U	NA	760	NA
Methane	μg/L		74	5.0 UB	5.0 UB	91	120	NA	8.4	11	NA	75	NA
Sulfate	mg/L		9.5	16	15	36 F1	22	NA	52	51	NA	2.1	NA
Iron, Total	μg/L		44,000	11,000	18,000	36,000 ^2	28,000	NA	14,000	11,000	NA	28,000	NA
Iron, Dissolved	μg/L		17,000	57	47 J	59	16,000	NA	11,000	9,700	NA	21,000	NA
Total Organic Carbon	mg/L		0.98 J	2.2	2.5	1.7	0.91 J	NA	0.92 J	0.83 J	NA	0.88 J	NA

Table 6

Groundwater Analytical Results
2021 Annual Groundwater Performance Monitoring Report
1300 Revolution Street
Havre de Grace, Maryland



Notes:

¹ Values exceeding laboratory reporting limits are bolded. Values exceeding the numerical CAO goals are highlighted in gray.

² Water quality parameters are measured in the field during retrieval of each sampling device.

Acronyms and Abbreviations:

°C = degree Celsius

--- = not applicable

[] = duplicate sample result

μg/L = microgram per liter

μS/cm = microSiemen per centimeter

CAO = corrective action objective

COC = constituent of concern

amsl = above mean sea level

mg/L = milligram per liter

mV = millivolt

NA = not analyzed or measured

S.U. = standard unit

Qualifiers:

D = Quantified in a secondary dilution (lab qualifier).

J = Indicates an estimated concentration.

U = Indicates the analyte was analyzed but not detected greater than the detection limit. The associated value is the compound quantitation limit.

E = Results exceeded calibration range.

F1 = MS/MSD RPD exceeds control limits.

F2 = MS/MSD RPD exceeds control limits.

^2 = Calibration Blank (ICB and/or CCB) is outside acceptance limits.





		1,2	-DCA Concentrat (μg/L)	Percent Change	Percent Change		
Monitoring Well Location	Location/ Designation	Historical Maximum ²	Prior to Operation of the Expanded System ² (11/20/14)	Annual PMP Monitoring 2021 Results ² (09/14/21)	from Historical Maximum Concentration to 2021	Since Operation of the Expanded System to 2021	
Intermediate Overl	burden						
MW-12D ¹	On site, POC	8,400 (12/15/98)	< 1 U	< 1 U	-100%	0%	
MW-13D	On site, POC	12,000 (4/13/99)	130	16	-100%	-88%	
MW-6I	On site	9,000 (12/7/06)	1,700	52	-99%	-97%	
MW-25I	On site	170 (1/3/08)	56	2.7 J	-98%	-95%	
MW-14I	Off site	220 (1/3/08)	23	4.4	-98%	-81%	
Deep Overburden			-				
MW-28D	On site	5,700 (5/2/11)	3,500	1200 D	-79%	-66%	
MW-3	On site, POC	43,000 (5/28/96)	660	41 J	-100%	-94%	
MW-22D ¹	Off site	82 (9/17/02)	< 1 U	0.59 J	-99%	18%	
MW-8D ¹	Off site	2,800 (5/28/96)	< 1 U	< 1 UJ	-100%	0%	
MW-18 ³	Off site	4,800 (6/8/06)	100	0.82 J	-100%	-99%	
IVIVV-18°	Oil Site	4,000 (0/0/06)	270	1.1	-100%	-9970	
MW-14	Off site	4,000 (10/22/97)	24	< 1 UJ	-100%	-98%	
MW-16	Off site	11,000 (4/13/99)	160	< 1 UJ	-100%	-100%	
MW-27	Off site	12,000 (12/7/06)	6,600	< 1 UJ	-100%	-100%	
MM/ 223	Off site	920 (11/20/01)	94	13	-98%	959/	
MW-23 ³	Oil Site	920 (11/20/01)	56	14	-90%	-85%	
MW-19D1 ¹	Off site, POC	390 (12/19/01)	3	30	-92%	900%	
MW-20D1 ¹	Off site, POC	5.4 (3/23/05)	1.1	<1 U	-91%	-55%	

Acronyms and Abbreviations:

 μ g/L = microgram per liter

< = less than

% = percent

1,2-DCA = 1,2-dichloroethane

POC = point of compliance

Qualifiers:

D = Quantified in a secondary dilution (lab qualifier).

J = Indicates an estimated concentration.

U = Indicates the analyte was analyzed but not detected greater than the detection limit. The associated value is the compound quantitation limit.

Reference:

Arcadis. 2020a. 2019 Annual Groundwater Performance Monitoring Report. Cytec Solvay Group. Havre de Grace, Maryland (USEPA ID# MDD003075942). January.

¹Monitoring well locations highlighted in green exhibited concentrations of 1,2-DCA less than the numerical CAO goal of 5 μg/L prior to operation of the expanded system in November 2014 as well as in September 2021.

²For evaluation purposes, values detected less than laboratory reporting limits were assumed to be equal to half the reporting limit.

³Sampling at two discrete depths within the screened interval at MW-18 and MW-23 began in 2008. The maximum result collected from the center of the screened interval is used for evaluation purposes.

Figures

LEGEND:

CYTEC PROPERTY BOUNDARY

- SHALLOW OVERBURDEN ZONE MONITORING WELL
- INTERMEDIATE OVERBURDEN ZONE MONITORING WELL
- DEEP OVERBURDEN ZONE MONITORING WELL
- BEDROCK ZONE MONITORING WELL
- ▲ EXTRACTION WELL
- WELL SCREENED IN BOTH INTERMEDIATE AND DEEP **OVERBURDEN ZONES**
 - WELL SCREENED IN BOTH SHALLOW AND INTERMEDIATE OVERBURDEN ZONES
- GROUNDWATER USE RESTRICTION AREA
- APPROXIMATE EXTENT OF IMPACTED GROUNDWATER

- BASEMAP INFORMATION OBTAINED FROM MAP TITLED GROUND-WATER SURFACE ELEVATION [FEET], AUGUST 12, 1992, PREPARED BY GROUNDWATER TECHNOLOGY, 10610 IRON BRIDGE RD., JESSUP, MD. 20794, PROJECT No. 01322-5479 FOR AMERICAN CYANAMID COMPANY, DATED OCT. 5, 1992.
- BASED ON THE REFINEMENT OF THE CONCEPTUAL SITE MODEL PRESENTED IN THE 2017 ANNUAL MONITORING REPORT AND FOLLOWING REGULATORY CONCURRENCE, MW-11D, MW-16, AND MW-27 WERE RECLASSIFIED FROM INTERMEDIATE OVERBURDEN WELLS TO DEEP OVERBURDEN WELLS IN 2018.
- MONITORING WELLS SAMPLED IN OCTOBER 2020 AND IN ACCORDANCE WITH THE PERFORMANCE MONITORING PLAN ARE HIGHLIGHTED IN YELLOW. ALL MONITORING WELLS SHOWN WERE GAUGED IN DECEMBER 2020.
- 4. DDC DENSITY DRIVEN CONVECTION.

APPROXIMATE SCALE: 1 in. = 400 ft.

CYTEC SOLVAY GROUP HAVRE DE GRACE, MARYLAND **2021 ANNUAL GROUNDWATER PERFORMANCE** MONITORING REPORT

SITE PLAN

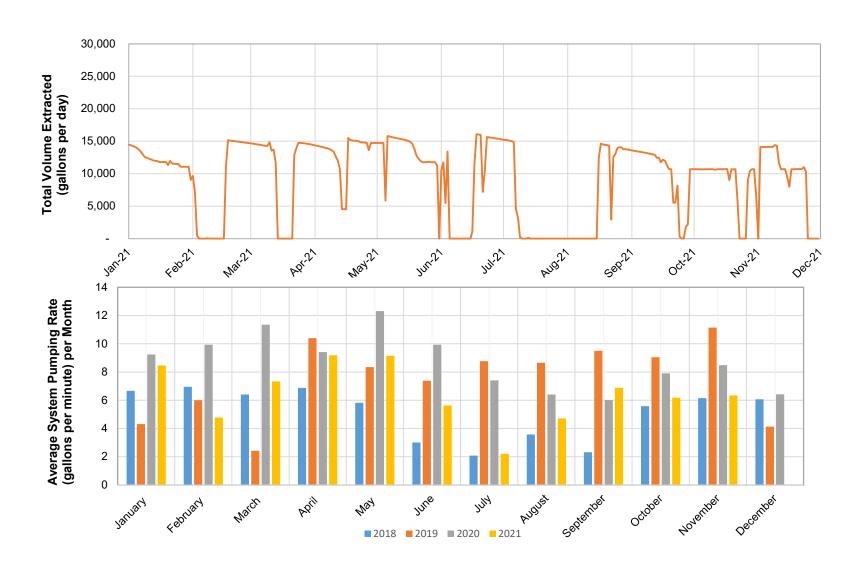


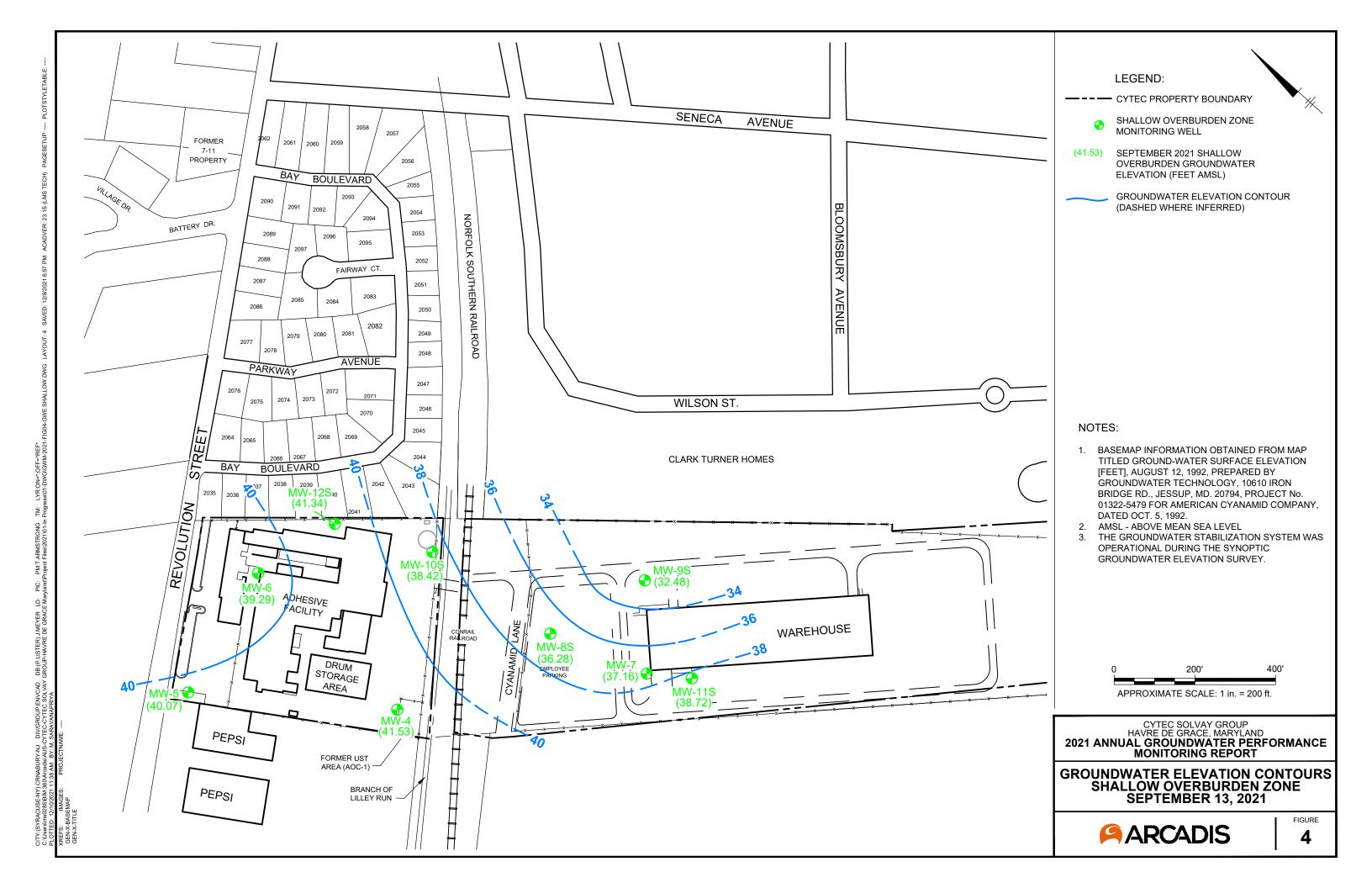
FIGURE

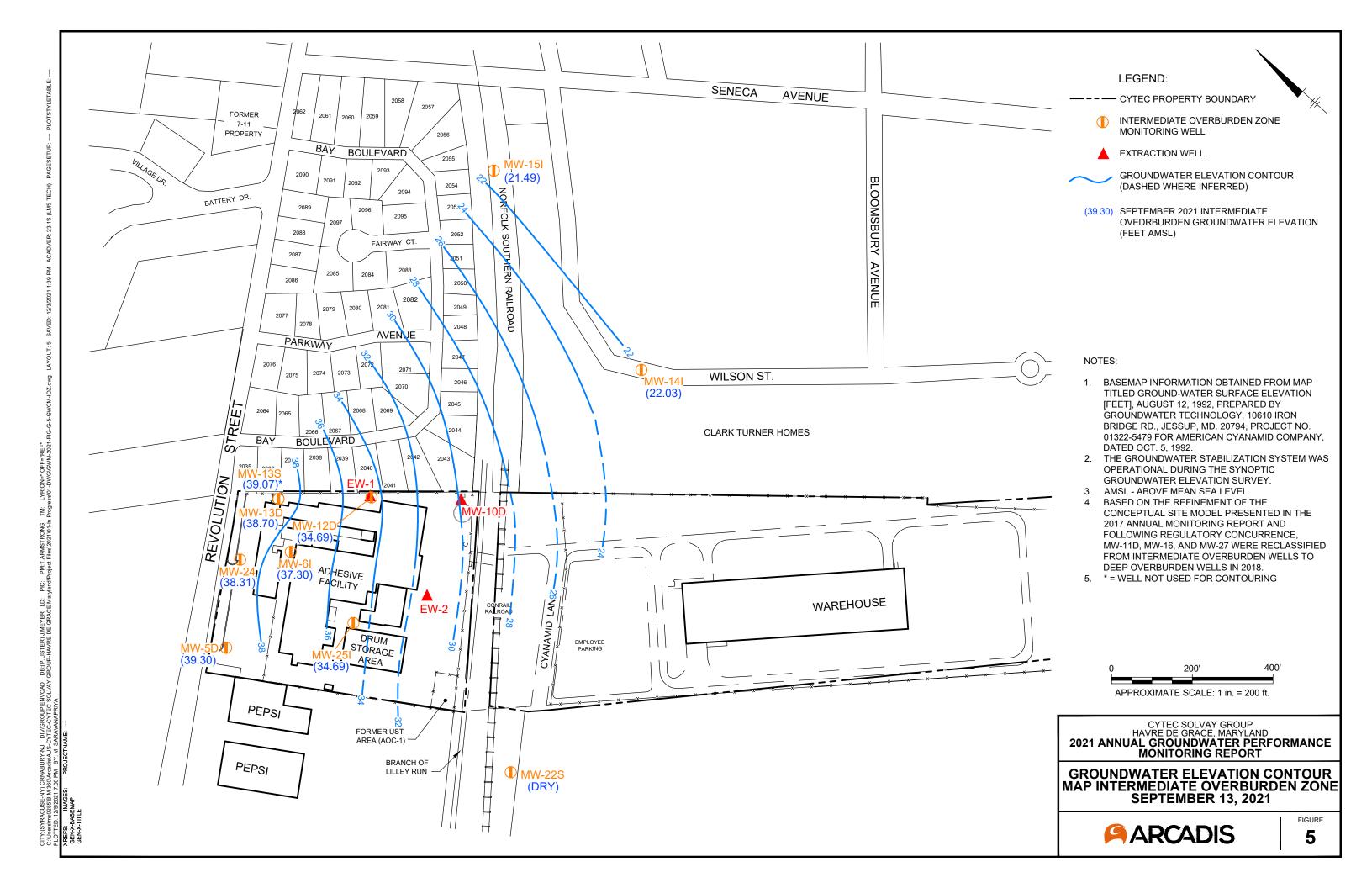
Figure 3
Summary of 2021 Pumping Volumes and Rates

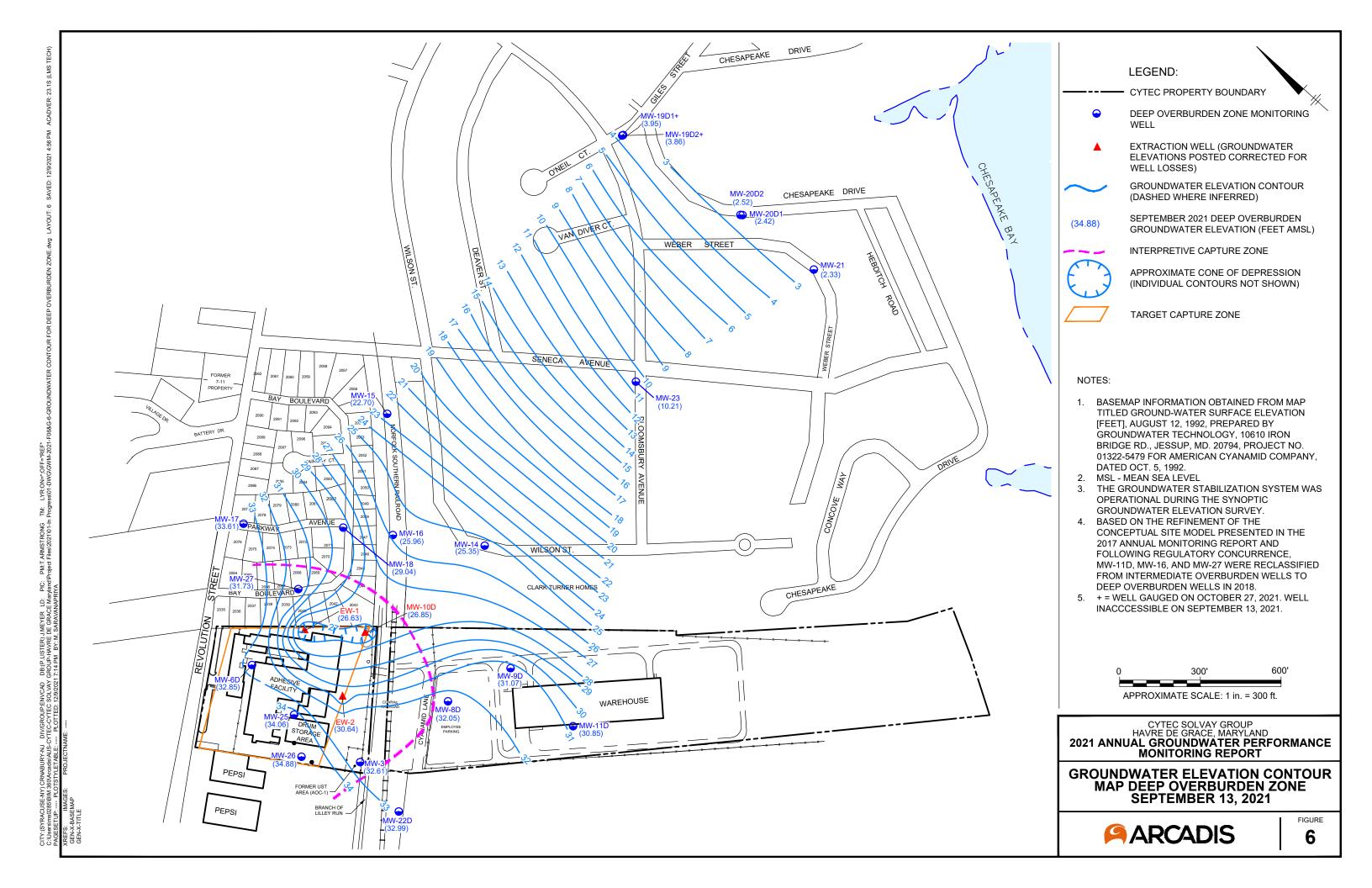


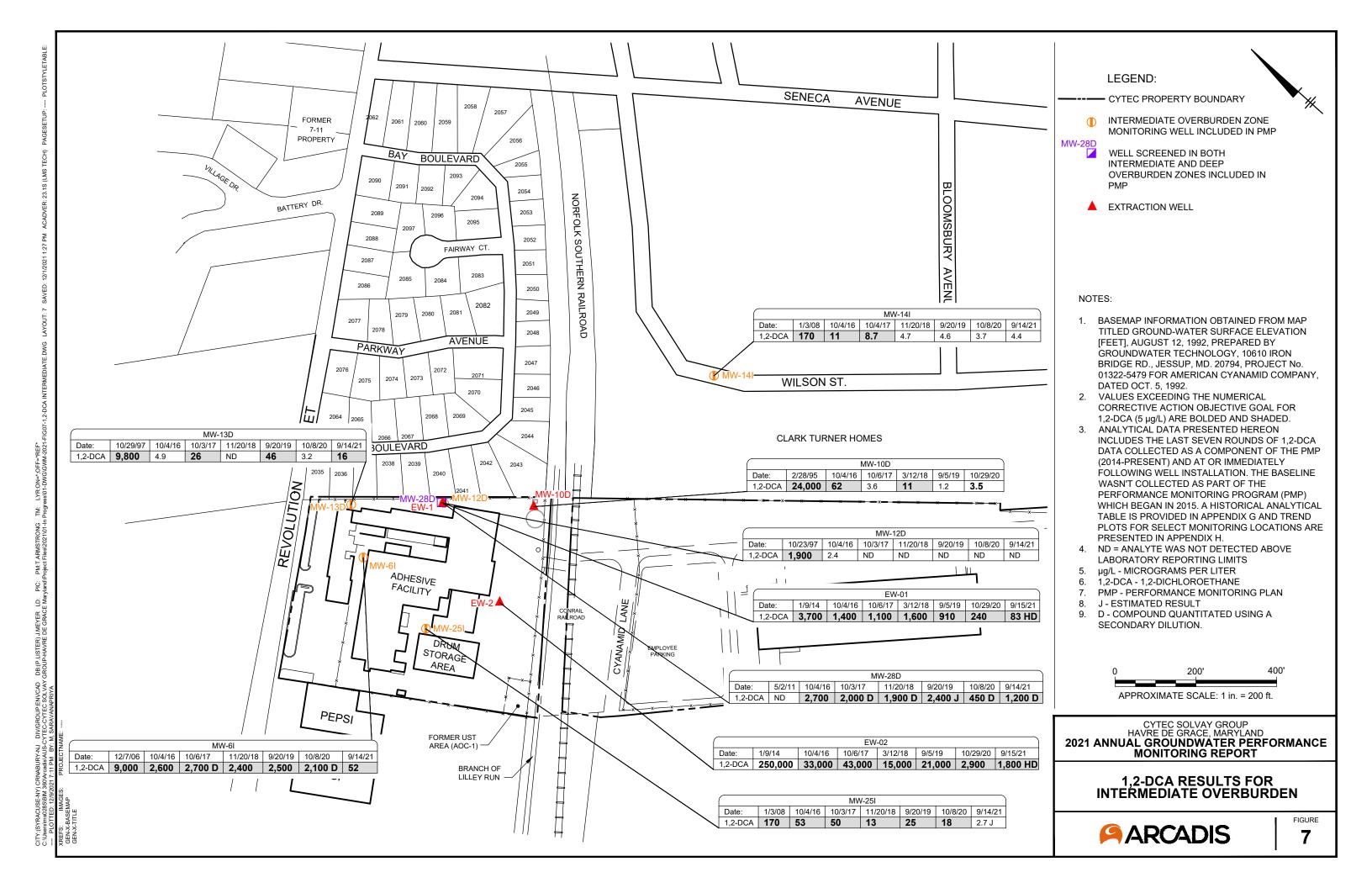
Cytec Solvay Group Havre de Grace, Maryland 2021 Annual Groundwater Performance Monitoring Report











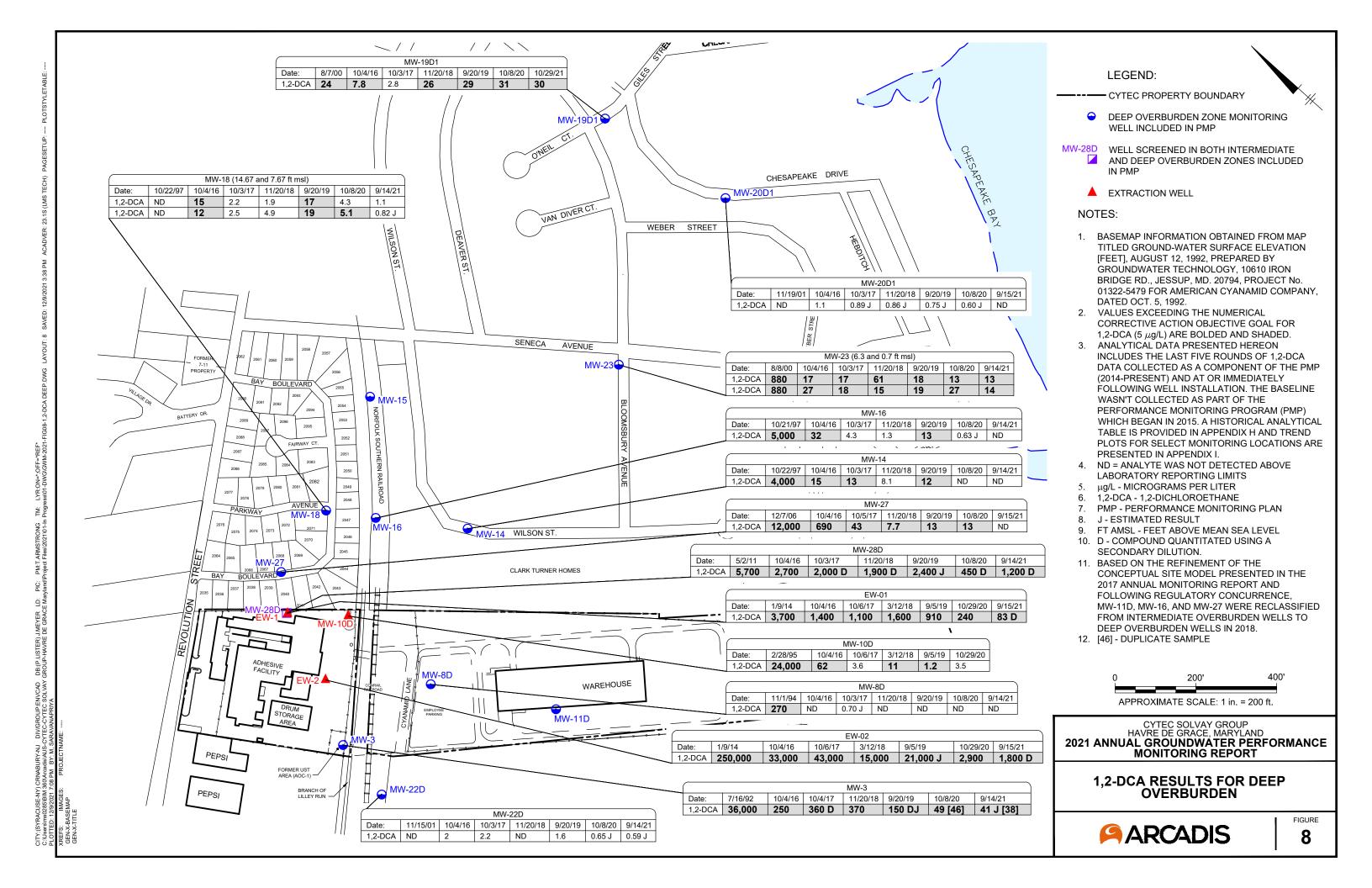
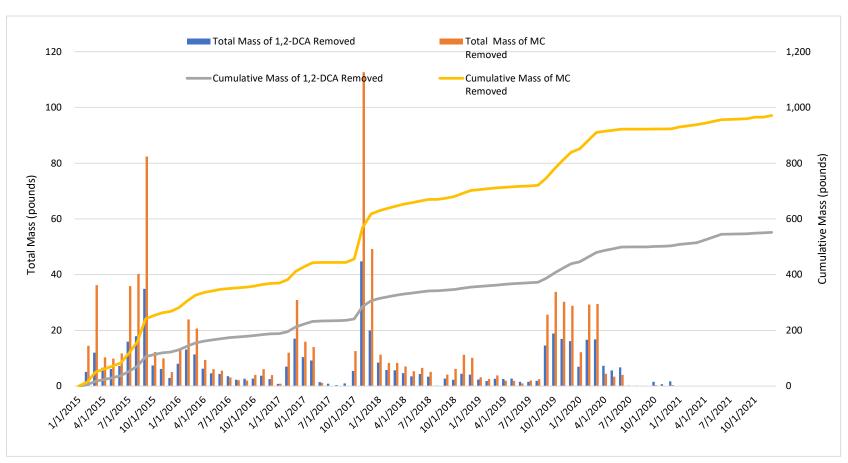


Figure 9
Mass Removal of 1,2-DCA and Methylene Chloride



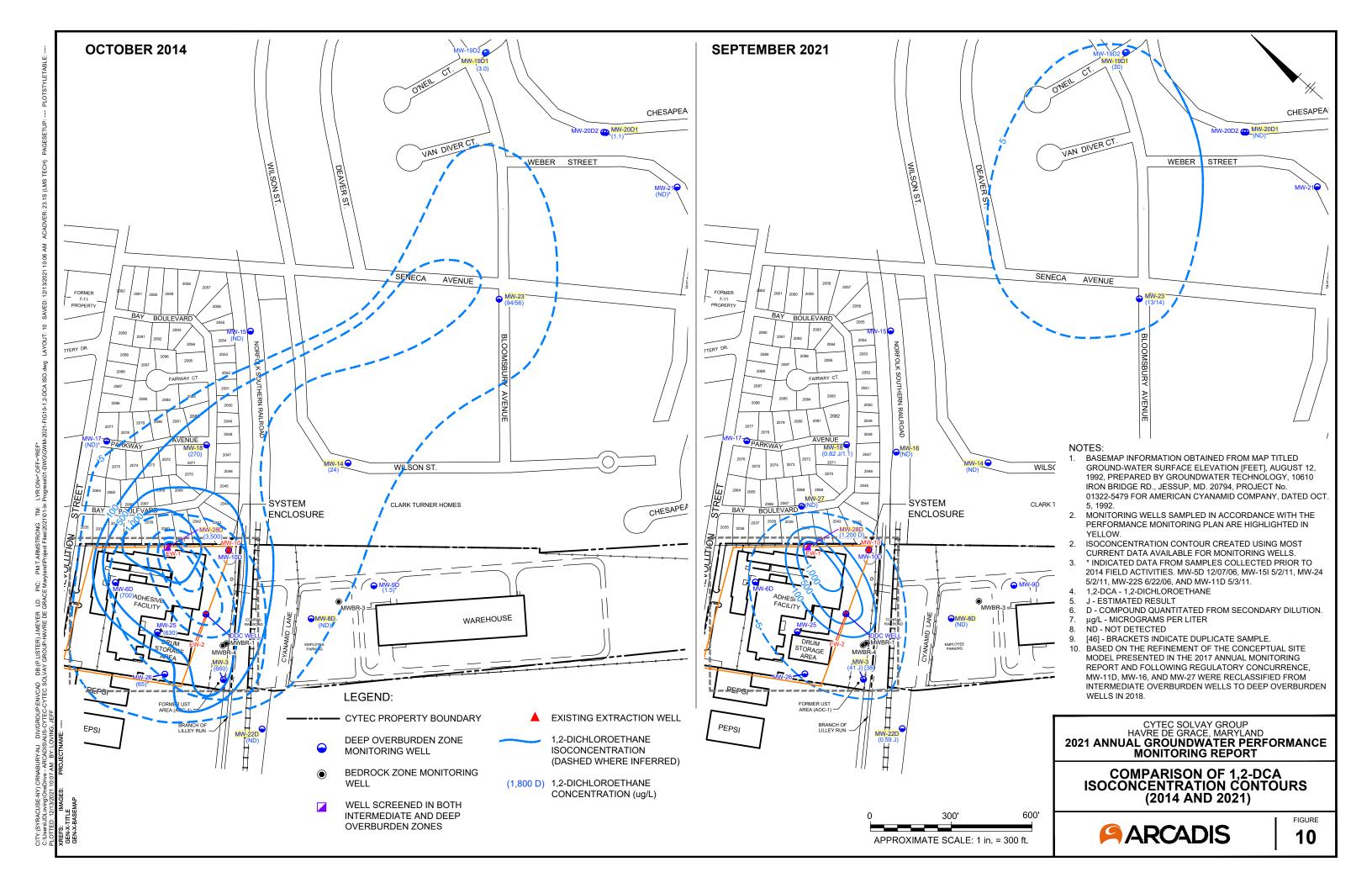
Cytec Solvay Group Havre de Grace, Maryland 2021 Annual Groundwater Performance Monitoring Report

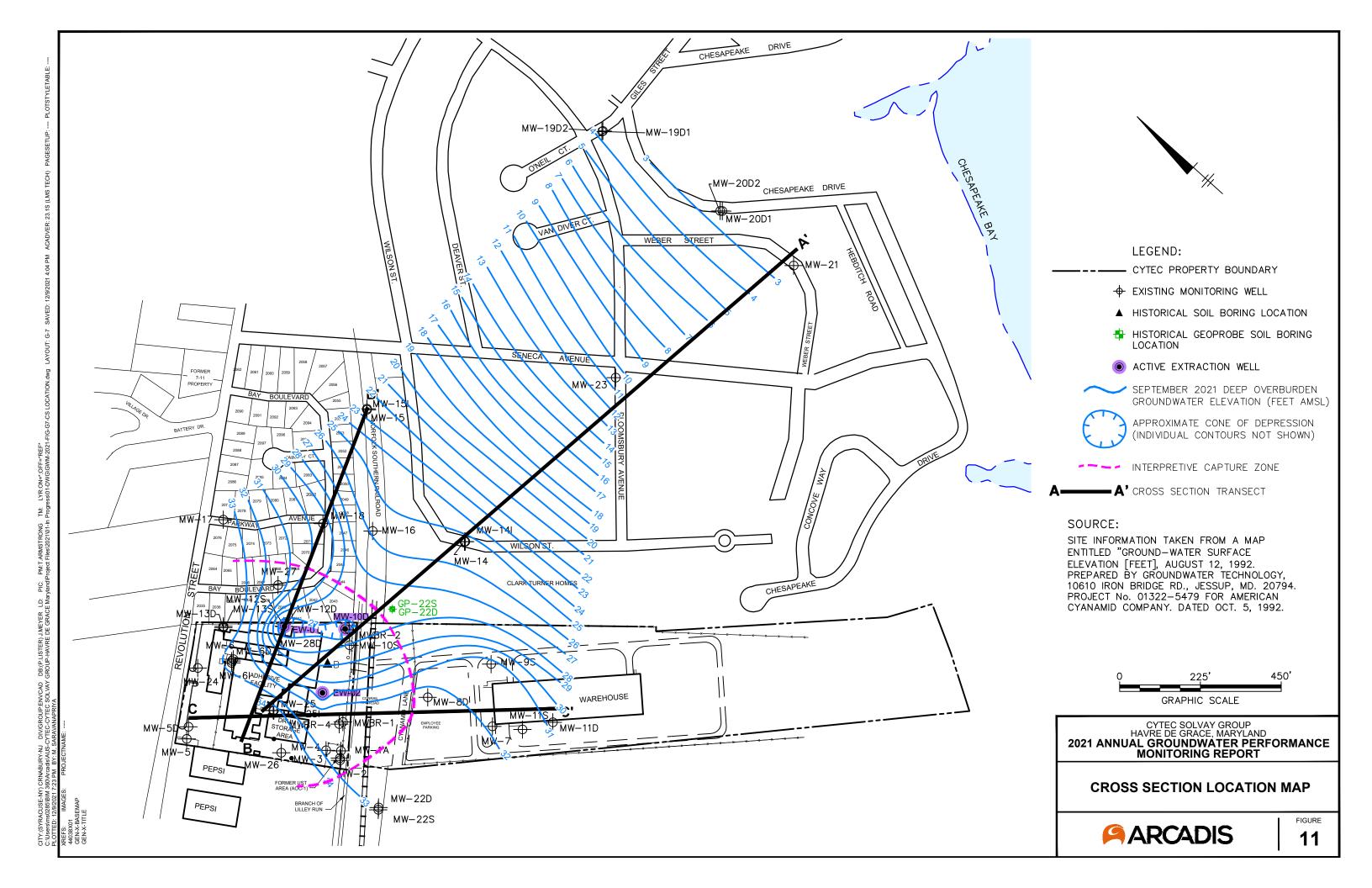


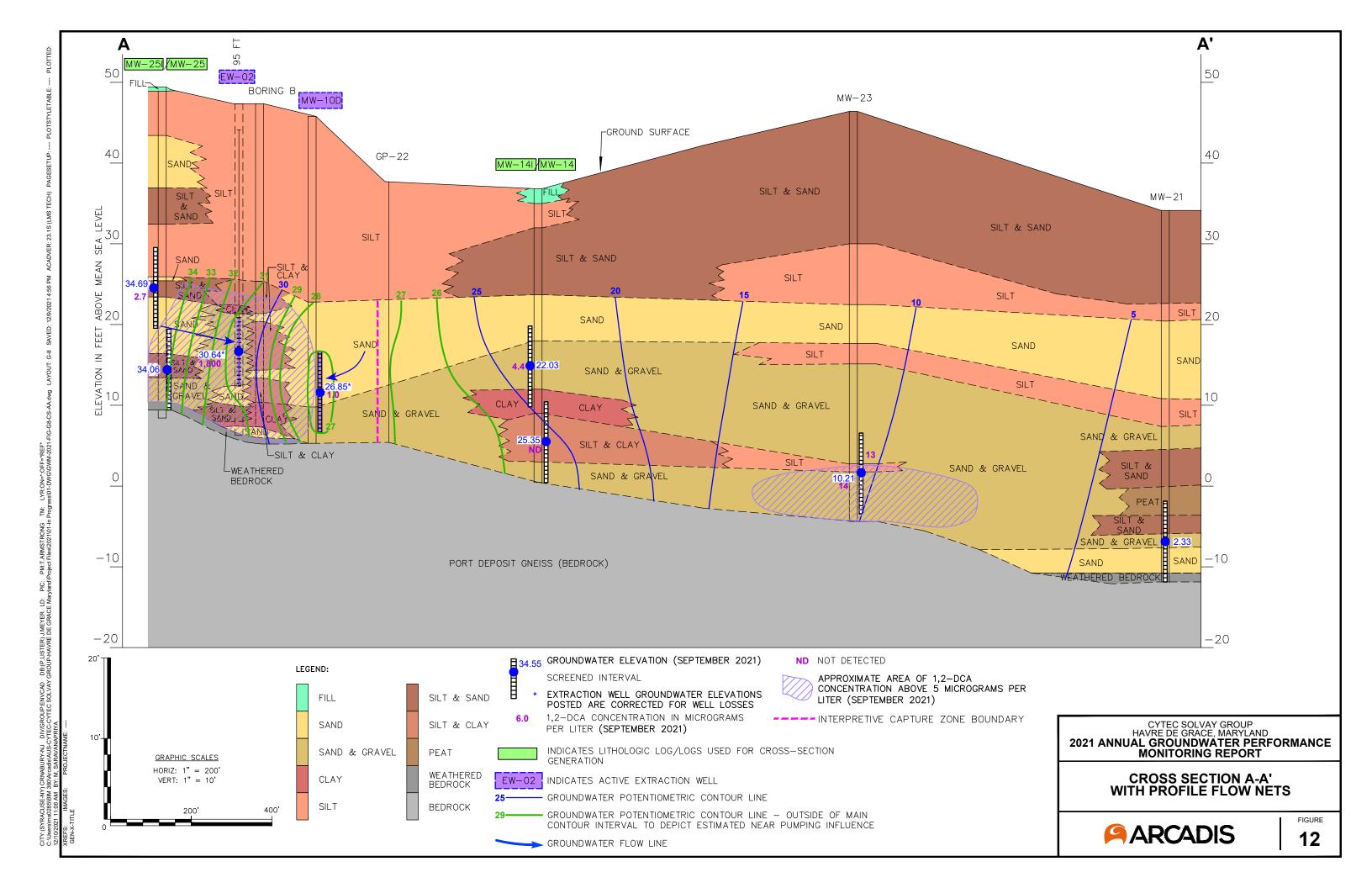
Notes:

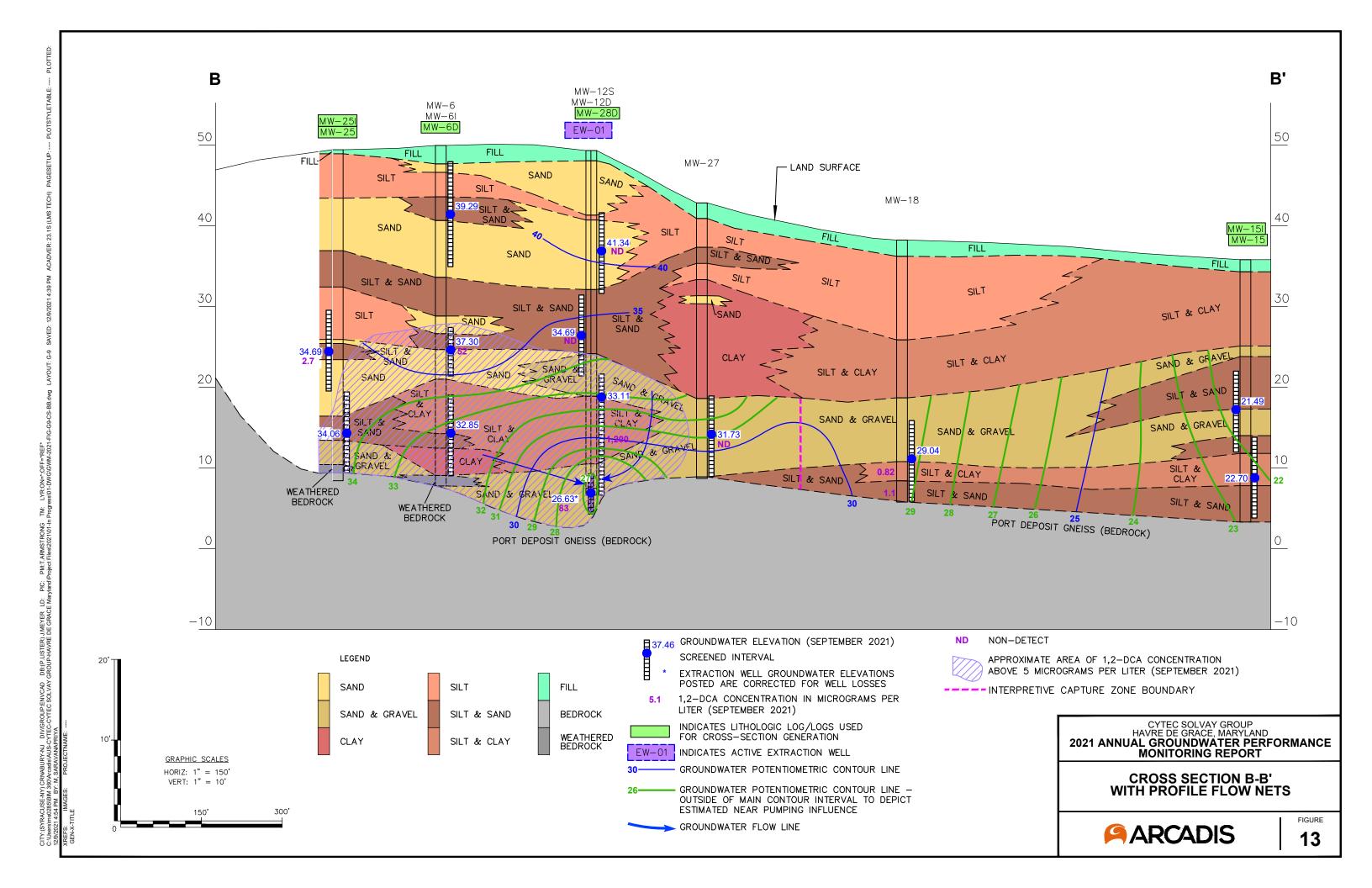
1,2-DCA = 1,2-dichloroethane

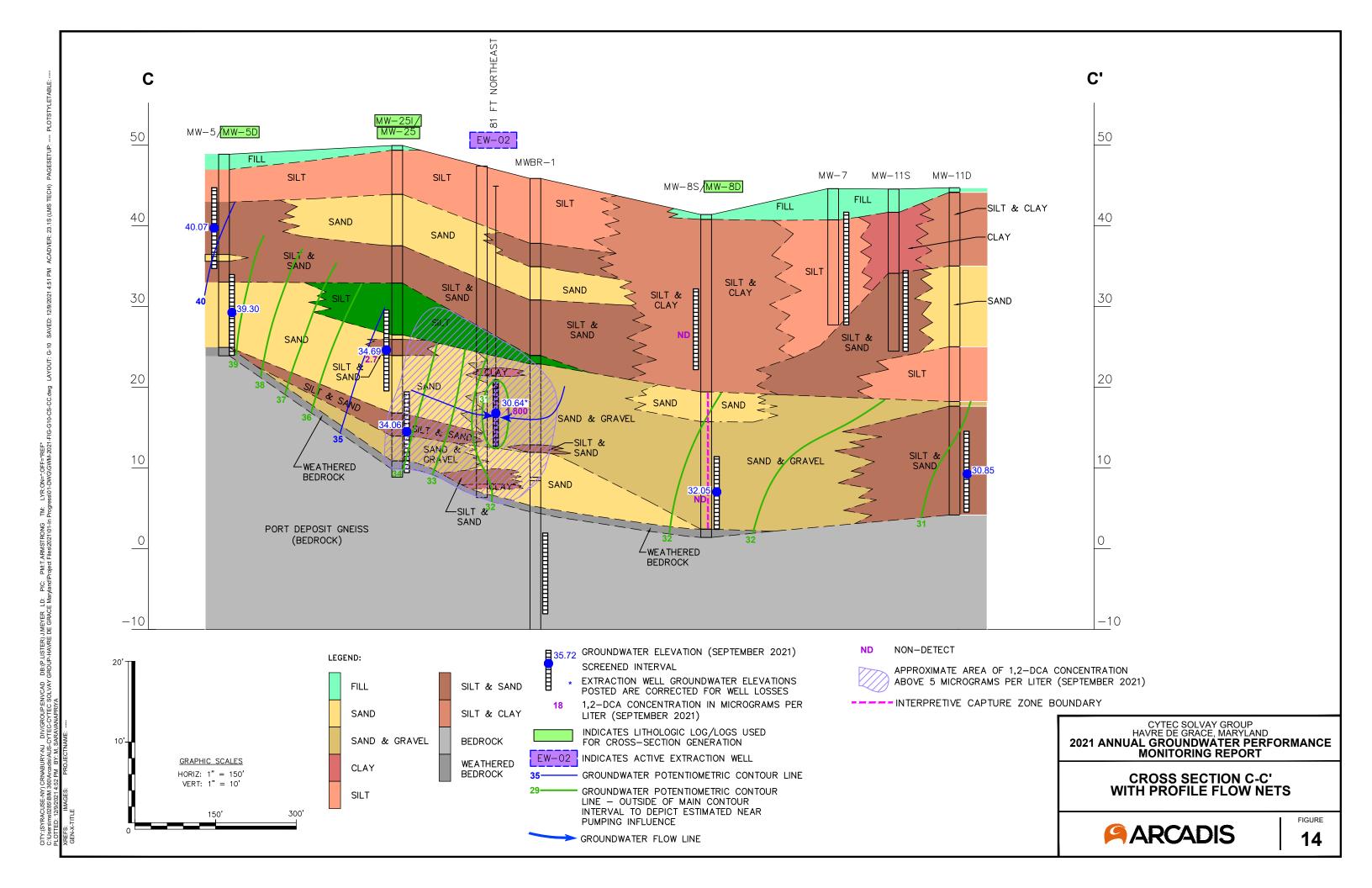
MC = methylene chloride











Monitored Natural Attenuation Indicators - 2021

Cytec Solvay Group Havre de Grace, Maryland

2021 Annual Groundwater Performance Monitoring Report





Notes:

- 1. Nondetects are presented as zeros for graphing purposes.
- 2. Monitored natural attenuation parameters are collected annually at a subset of the monitoring wells including MW-3, MW-14I, MW-16, MW-18, MW-19D1, MW-20D1, MW-23, and MW-27.

μg/L = micrograms per liter

mg/L = milligram per liter

s.u. = standard units

VOC = volatile organic compound

Appendix A

Field Documentation





Date	Activities
1/26/2021	An EW-02 low flow alarm was received prior to routine pump cleaning and replacement.
2/1/2021	An EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted within 24 hours. Alarm disabled as it continued to be active after rain event, and reset on 2/17/2021.
2/2/2021	A drive fault alarm was received. The system was reset within 24 hours of shutting down by on-site personnel. Arcadis staff restarted the system remotely.
2/3/2021	Arcadis staff on site to conduct routine operation and maintenance (O&M), including replacing pump at EW-02. Multiple leaks were identified in the system enclosure; leaked water was collected in the floor drain within the system enclosure that drains back to MW-10D. Arcadis staff replaced leaking parts of system on 2/17/21 and restarted the system.
2/16/2021	An EW-02 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted remotely within 24 hours of shutting down. Arcadis staff inspected the vault on 2/17/2021 and confirmed no visible leak. The alarm was disabled as the alarm continued to be active after the rain event.
2/17/2021	Arcadis staff onsite to respond to pipe leak alarms.
3/9/2021	Arcadis staff on site to conduct routine O&M, including quarterly effluent sampling. System remained on during the sampling event.
3/12/2021	An EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted within 24 hours.
3/14/2021	An EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted on 3/22/21.
3/24/2021	An EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted within 24 hours.
4/12/2021	An EW-02 low flow alarm was received prior to routine pump cleaning and replacement.
4/14/2021	Arcadis staff on site to conduct routine O&M, including replacing pump at EW-02. Arcadis and Parratt Wolff staff on site to conduct well rehabilitation event.
4/16/2021	A high system pressure alarm was received at the end of routine O&M. The pressure gauge was faulty and was replaced on 4/28/2021.
4/28/2021	Arcadis staff onsite to conduct routine hydro-jetting event.
5/22/2021	An EW-02 low flow alarm was received. Arcadis staff responded to this alarm on 6/3/2021 to clean and replace the EW-02 extraction pump to increase flow at this extraction well.
5/31/2021	An E-stop and drive fault alarms were received. The system was reset within 24 hours of shutting down by on-site personnel
6/1/2021	An E-stop alarm was received. The system was reset by on-site personnel and restarted within 24 hours of shutting down.
6/3/2021	Arcadis staff were onsite to clean and replace the EW-02 extraction pump.
6/5/2021	A T-401 high level alarm was received. Arcadis staff responded to this alarm on 6/14/2021 and 6/17/2021 and changed the orientation of the valve to stop the leak and restart the system.
6/21/2021	A drive fault alarm was received. The system was reset within 24 hours of shutting down by on-site personnel. Arcadis staff restarted the system remotely.
6/22/2021	An E-stop alarm was received. The system was reset by on-site personnel and restarted within 24 hours of shutting down.
7/7/2021	An EW-01 pipe leak alarm was triggered during a period of heavy rainfall, as water infiltrated the well vault. The system was restarted on 7/8/2021. A faulty sensor was replaced at EW-02 to clear this alarm.
7/9/2021	An MW-10D transducer failure alarm was received, indicating the motor at MW-10D had failed. Replacement equipment, including pump motor and motor lead, was required to repair and restart the system. The system was left off until the replacement parts were available. Arcadis staff responded to the site on 8/16/2021 to repair and restart the system.
8/25/2021	A drive fault alarm was received. The system was reset within 24 hours of shutting down by on-site personnel. Arcadis staff restarted the system remotely.
8/26/2021	Arcadis staff on site to conduct routine O&M, including quarterly effluent sampling. System remained on during the sampling event.
9/13/2021	An EW-01 sump high level alarm was received. This alarm was triggered when Arcadis staff opened the well lid during the annual sampling event and standing water on the well lid entered the vault. The alarm was cleared and the system was restarted within 24 hours.





Date	Activities
9/15/2021	Arcadis staff on site to conduct routine O&M, including quarterly effluent sampling. System remained on during the sampling event.
9/16/2021	An E-stop and drive fault alarms were received. The system was reset within 24 hours of shutting down by on-site personnel.
9/22/2021	An E-stop and drive fault alarms were received. The system was reset within 24 hours of shutting down by on-site personnel.
9/19/2021	An EW-02 low flow alarm was received. Arcadis staff responded to this alarm on 10/18/2021 to clean and replace the EW-02 extraction pump to increase flow at this extraction well.
9/24/2021	Several low pH alarms were received, indicating pH of discharge from EW-01 was less than 5.00. The alarms were cleared remotely and the system was restarted on 9/27/2021. The pH probe is faulty and was replaced on 12/9/2021.
10/11/2021	An E-stop alarm was received. The system was reset by on-site personnel and restarted within 24 hours of shutting down.
10/22/2021	An EW-02 transducer failure alarm was received and the system was automatically shut down. This alarm occurred due to a faulty transducer in the EW-02 well. This transducer was removed from the well on 10/27/2021 for repairs and will be reinstalled with a repaired transducer received from the manufacturer.
10/28/2021	An E-stop and drive fault alarms were received. The system was reset within 24 hours of shutting down by on-site personnel.
10/31/2021	A drive fault alarm was received. The system was reset within 24 hours of shutting down by on-site personnel. Arcadis staff restarted the system remotely.
11/2/2021	Arcadis staff on site to conduct routine O&M, including quarterly effluent sampling. System remained on during the sampling event.
11/3/2021	Arcadis staff onsite to conduct routine O&M, including pump cleaning at MW-10D.
11/16/2021	A drive fault alarm was received. The system was reset within 24 hours of shutting down by on-site personnel. Arcadis staff restarted the system remotely.
11/25/2021	A drive fault alarm was received. The system was reset on 12/1/2021 by on-site personnel.
11/29/2021	An E-stop alarm was received. The system was reset on 12/1/2021 by on-site personnel.

Groundwater Sampling Forms		

Annual Well Inspection Checklist Cytec Solvay Group Havre de Grace, Maryland



Well Identification	On/Off Facility	Туре	Total Depth (ft bgs)	Total Sounded Depth (ft bTOC)	Depth to Water (Stick Up or Flush Mount	Well Diameter (inches) - Material	Secured? (i.e. bolts or locks: present?)	Capped? (i.e., well cap present with tight seal)	Any Damage Noted?	Additional Comments
DDC Well	On - Main	Pilot Sparge Well	40			→	4-PVC	_	30017		
EW-1	On - Main	Extraction	47		2162	F	6-SS			100	
EW-2	On - Main	Extraction	34	_	1136	_	6-SS	_	>	No	
MW-1A	On - Main	Monitoring	20	16.5	4.72	5	2-SS	ч	4	no	
AW-2	On - Main	Monitoring	20.5	9.87	614	3	2-58	N N	72	70	
NW-3	On - Main	Monitoring	40	46.06	12.78	F	2-55	ů.	7	NO	
∧w-4	On - Main	Monitoring	15	14.98	4.67	Ë	2-SS	ч	4	N	
AW-5	On - Main	Monitoring	15	14.05	9 63	F	2-SS	Ÿ	4	N	
/W-5D	On - Main	Monitoring		24,45	9.25	E	a	ď	Ÿ	ŭ	
MW-6	On - Main	Monitoring	16	16.21	11.64	F	2-PVC	u u	7	N	
MW-6D	On - Main	Monitoring		41.30	17.49	F	2	y	ÿ	N	
/W-61	On - Main	Monitoring		28.26	12.90	F	2	и	ч	N	
1W-7	On-Warehouse	Monitoring	18	15.10	7,51	F	2	- J	4	N	
MW-8D	On-Warehouse	Monitoring	40	38.15	9.14	F	2	Ÿ	U	N	
IW-8S	On-Warehouse	Monitoring	19	7.35	494	F	2	и	- J	2	
/W-9D	On-Warehouse	Monitoring	33	32.15	10.83	E	2	Ú	- 5	14	
/W-9S	On-Warehouse	Monitoring	20	19,40	9.54	F	2	9	y	15	
/W-10D	On - Main	Extraction	39.2		15.16	F	/	И		- 4	
/W-10S	On - Main	Monitoring	20	14.51	6.37		2	t	7	11	
1W-11D	On-Warehouse	Monitoring	40	35,24	13.68	F	a	- 2	ť	2	
IW-118	On-Warehouse	Monitoring	20	20,15	5 5 6	F	7	ŭ	W	N	
/W-12D	On - Main	Monitoring	28	27.40	AND STREET		2-SS	d	d	N	
fW-12S	On - Main	Monitoring	18	17.35	8.28	F	2-SS	- J	73	N	
W-13D	On - Main	Monitoring	32	31.59	12.09	E	2-SS	7	4	N	
/W-13S	On - Main	Monitoring	20	19.18	11.74	YC	2-SS	N	4	N	
IW-14	Off	Monitoring	36	35,47	N. 08	F	2-SS	٧	<u> </u>	N	
/W-14I	Off	Monitoring	26	25.15	13.77	F	2	Ÿ	y	N	
IW-15	Off	Monitoring	32	37.1%	1262	=	2-88	4		N	
IW-15I	Off	Monitoring	23	22.16	13.50	D	2	3	G	N	
fW-16	Off	Monitoring	37	36.37	13.7	VE	2-SS	9	<u>v</u>	2	
IW-17	Off	Monitoring	10.6	10.67	622	E	2-PVC	3	9	N	
IW-18	Off	Monitoring	32.5	31.41	933	E	2-58	7	7	N	



Well Identification	On/Off Facility	Туре	Total Depth (ft bgs)	Total Sounded Depth (ft bTOC)	Depth to Water (ft bTOC)	Stick Up or Flush Mount	Well Diameter (inches) - Material	Secured? (i.e., bolts or locks present?)	Capped? (i.e., well cap present with tight seal)	Any Damage Noted?	Additional Comments
MW-19D1	Off	Monitoring	44								Car parked on ton 9/13
MW-19D2	Off	Monitoring	74								11 11 11 11 11
MW-20D1	Off	Monitoring	47	46.75	23.24	F	2	V	3	N	
MW-20D2	Off	Monitoring	95	95.44	23 12	F	2	- G	3	N	
MW-21	Off	Monitoring	46	45.31	31.51	P	2	W	d	N	
MW-22D	Off	Monitoring	37.5	36,50	11.33	F	2	W	d	N	
MW-22S	Off	Monitoring	17	10.85	Dru	F	ユ		V	N	
MW-23	Off	Monitoring	49.4	49.45	3575	F	2	K	4	N	
MW-24	On - Main	Monitoring		29.31	10.40	F	2	N.	Ц	N	
MW-25	On - Main	Monitoring		34.02	16.36	F	2	V	×	N	
MW-251	On - Main	Monitoring	30	29.41	14.85	P	2	4	3	N	
MW-26	On - Main	Monitoring		38.72	12.36	F	2	W	W	N	
MW-27	Off	Monitoring	34	34.17	11, 34	F	2	4	×	N	
MW-28D	On - Main	Monitoring	42,5	41,56	1603	F	2	3	X	N	
MWBR-1	On - Main	Monitoring	54	SHAME				-	- 3	100	can not locate
MWBR-2	On - Main	Monitoring	78	79.29	13.68	F	2	ч	7	N	
MWBR-3	On-Warehouse	Monitoring	100	100.65	10.5	F	2	d	vi	N	"
MWBR-4	On - Main	Monitoring	117	117.75	13 65	F	2	d	ú	N	

Annual Wall Inspection Checklist Cytec Solvay Group Havre de Grace, Maryland



Well Identification	On/Off Facility	Туре	Total Depth (ft bgs)	Total Sounded Depth (ft bTOC)	Depth to Water (ft bTOC)	Stick Up or Flush Mount	Well Diameter (inches) - Material	Secured? (i.e., bolts or locks present?)	Capped? (i.e., well cap present with tight seal)	Any Damage Noted?	Additional Comments
MW-19D1	Off	Monitoring	44	44.75	24.94	F	211	yes	Les	2	10/29/21. DTW = 25.31 on 10/27/2
MW-19D2	Off	Monitoring	74		25.35	F	2"	yes	yes	N	10/27/21
MW-20D1	Off	Monitoring	47						-		
MW-20D2	Off	Monitoring	95								
MW-21	Off	Monitoring	46		30				1,2/12		
MW-22D	Off	Monitoring	37.5								
MW-22S	Off	Monitoring	17								
MW-23	Off	Monitoring	49.4								
MW-24	On - Main	Monitoring		harry .			1	T. C. C.			
MW-25	On - Main	Monitoring									EX.
MW-251	On - Main	Monitoring	30								
MW-26	On - Main	Monitoring									
MW-27	Off	Monitoring	34								
MW-28D	On - Main	Monitoring	42.5	Plant Value							
MWBR-1	On - Main	Monitoring	54	54.59	13.00						10/18/2021
MWBR-2	On - Main	Monitoring	78			The Property of			Y I I		
MWBR-3	On-Warehouse	Monitoring	100								
MWBR-4	On - Main	Monitoring	117								



HydraSleeve™ Field Form

Site:	Cytec Havre de Grace
Location:	Havre de Grace, Maryland
Well ID:	MW-3
Well Type:	□Monitoring □Other:
Well Finish:	☐Stick Up ☐Flush Mount
Measuring Pt:	m
•	
= = =	Diameter: Screened Interval (ft bTOC): Material: SS
Well Casing:	
Well Screen:	Diameter:
Deployment	
Date and Time of	
Weather Condition	
	rater at time of deployment: 12.78
Total well depth at	t time of deployment: 40.06
Dimensions of Hy	draSieeve™: Length (in.) Diameter (in.)
Denloyment Methy	od/Position of Weight: Septem Anchor: Weight attached to bottom of
Deployment metho	od/Position of Weight: Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
	☐Bottom Anchor: Weight attached to bottom of HydraSleeve™
	Weight suspended in well.
	☐Top-Down: Weight attached to top and bottom of
	HydraSleeve™. Bottom weight rests on well bottom.
Denleyment Denth	n (Top of HydraSleeve™) (ft bTOC):
Deployment Depth	(Top of Hydrasieeve) (it broo)
Retrieval	
Date and Time of F	Retrieval: Date: 9/14/21 Time: 1/45
Total # of days dep	
Weather Condition	
Retrieval Method:	Continuous Pull (preferred)
	☐ Short Strokes
Depth to groundwa	ater at time of retrieval (measured before retrieval):
	time of retrieval (measured after retrieval): 40.54
	arameters Upon Retrieval:
Temp (°C) ORF	P(mV) pH DO (mg/L) Cond (mS/cm) Water quality meter: YSISS
	8,2 9,44 7.01 0,365 Serial #:
Turkidity at Gracu	adulator Sambia Idiebobeod trom HudraSloovo''''i
	ndwater Sample (dispensed from HydraSleeve TM):
Turbidity meter:	Serial #:
Turbidity meter: _	dity:(NTU) Post-filtered Turbidity:(NTU)
Turbidity meter:	Serial #:(NTU) Post-filtered Turbidity:(NTU)
Turbidity meter: _	Serial #:
Turbidity meter: _ Pre-filtered Turbid Sample ID:Mu	Serial #:
Turbidity meter: _ Pre-filtered Turbid Sample ID:Mu	Serial #:
Turbidity meter: _ Pre-filtered Turbid Sample ID:Mu	Serial #:
Turbidity meter: _ Pre-filtered Turbic Sample ID:M& Notes/Observation	Serial #: (NTU) Post-filtered Turbidity: (NTU) 13 (09 14 21) Replicate ID: DUPO2 (09 14 21) Sample Time: 1145
Turbidity meter: Pre-filtered Turbic Sample ID:M\(\text{D}\) Notes/Observation Field Sampling Te	Serial #:



Site:	Cytec Havie	ue Grace					
Location:	Havre de Gra	ce, Maryland					
Well ID:	mh-	4					
Well Type:	☐Monitoring	□Other:					
Well Finish:	☐Stick Up	Éflush Mount					
Measuring Pt:	☐Top of Casi	ng	☐Other (specify	/):			
Total Depth As Co	nstructed (ft b	TOC):	_Screened Interv	al (ft bTO	C):		
Well Casing:		2			PVC		
Well Screen:	Diameter:		_				
Deployment							
Date and Time of I	Deployment:	Date:	A/13/	کا	Time: \\ 2	1/2	
Weather Condition	ıs:	clea					
Depth to groundwa	ater at time of	deployment:	4.87				
Total well depth at	time of deplo	yment:	14.98				
Dimensions of Hyd	draSleeve™:	Length (in.)		Diame	ter (in.)		
Deployment Metho	od/Position of	Weight:	□Bottom Ancho HydraSleeve™. □Bottom Ancho Weight suspend	Weight re or: Weight	ests on well lattached to	bottom.	aSleeve™
			□Top-Down: W	-	•		
			HydraSleeve™.		eight rests o	n well bottom.	
Deployment Depth	(Top of Hydra	iSleeve™) (ft bī	(OC):				
Retrieval			,				
Date and Time of R	Retrieval:	Date:	9/14	1/21	Time:	1138	
Total # of days dep	oloyed:	1	-				
Weather Condition	s:	clea	_				
Retrieval Method:			Continuous F	ull (prefe	rred)		
			☐ Short Strokes	S			
Depth to groundwa						.68	
Total well depth at	time of retriev	al (measured a	fter retrieval):	15,1	6		
Downhole Field Pa				3			
Temp (°C) ORP	(mV) pH	DO (mg/L)	Cond (mS/cm)	Water qu	uality meter	: YSI S	56
	6.5 7.00		0,274	4			
Turbidity of Groun	dwater Samp	le (dispensed fr	om HydraSleeve	TM):			
Turbidity meter: _			Serial #:				
Pre-filtered Turbid	lity:	(NTU)	Post-filtered Tu	rbidity:		(NTU)	
Sample ID: M4	U4 (0914	Replica	te ID:		Saı	mple Time:	130
Notes/Observation	is:	<u> </u>					
-			•				
Field Sampling Tec			-				
Nama(a). Anna Kini	r / Shwetha Sri	idharan	Compo	- Arcac	tie		



		de Grace			
Location:	Havre de Gra	ce, Maryland			
Well ID:	WM-	65			
Well Type:	☐Monitoring	□Other:			
Well Finish:	☐Stick Up	☐Flush Mount			
Measuring Pt:	■ Top of Casi		□Other (specify):	
Total Depth As Co	-	_		al (ft bTOC):	
	Diameter:		-	PVC	
Well Casing: Well Screen:	Diameter:		- Waterial	PVC	
	Diameter.		-		
Deployment			6 (12 (1		Lives .
Date and Time of		Date:	9/13/2	Time:	1143
Weather Conditio	3	ouny	JAMES 17	1	
Depth to groundy			1300	.90	
Total well depth a	it time of deplo	yment:		6	
Dimensions of Hy	⁄draSleeve™:	Length (in.)		Diameter (in.)_	
Deployment Meth	od/Position of	Weight:	Bottom Ancho	r: Weight attached	to bottom of
				Neight rests on w	
			☐Bottom Ancho	r: Weight attached	I to bottom of HydraSleeve™
			Weight suspend	ed in well.	
			□Top-Down: We	eight attached to to	op and bottom of
			HydraSleeve™.	Bottom weight res	ts on well bottom.
Deployment Depti	h (Top of Hydra	aSleeve™) (ft bī	TOC):		
Retrieval			,		
Retrieval Date and Time of	Retrieval:	Date:	9/14/	Z/ Time:	1240
		E	9/14/	Z/ Time:	1240
Date and Time of	ployed:	Date:			1240
Date and Time of Total # of days de	ployed: ns:	E	9/14/		1240
Date and Time of Total # of days de Weather Condition Retrieval Method:	ployed: ns:	CIEAC	□ Continuous F	ull (preferred)	
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw	ployed: ns: vater at time of	retrieval (measu	☐ Continuous F☐ Short Strokes	rull (preferred)	
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw	ployed: ns: vater at time of	retrieval (measu	☐ Continuous F☐ Short Strokes	rull (preferred)	
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a	ployed: ns: vater at time of t time of retriev	retrieval (measured and Retrieval)	☐ Continuous F☐ Short Strokesured before retrieval):	rull (preferred)	3
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a	ployed: ns: vater at time of t time of retriev	retrieval (measured at n Retrieval:	☐ Continuous F☐ Short Strokesured before retrieval):	rull (preferred)	3
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Pa	ployed: ns: vater at time of t time of retriev	retrieval (measural an Retrieval:	☐ Continuous F☐ Short Strokesured before retrieval):	rull (preferred)	3 eter: YST 556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Pa	rater at time of t time of retrievarameters Upo	retrieval (measured an Retrieval:	Short Strokesured before retrieval): Cond (mS/cm)	wall: 12.5 Water quality me	3 eter: YST 556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Particular (°C) OR	rater at time of t time of retrievarameters Upo P(mV) pH	retrieval (measured an Retrieval:	Cond (mS/cm) Cond HydraSleeve	wall: 12.5 Water quality me	3 eter:Y\$I_ \$556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power (°C) OR Turbidity of Grounds	rater at time of t time of retrievarameters Upo P(mV) pH	retrieval (measured an Retrieval:	Cond (mS/cm) Com HydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	3 eter: <u>YSI 556</u>
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power (°C) OR Turbidity of Groundw Turbidity meter:	ployed: ns: rater at time of t time of retriev arameters Upo P(mV) pH 9 9 9 5 ndwater Samp	retrieval (measured at n Retrieval: DO (mg/L) le (dispensed fr	Cond (mS/cm) Cond (mS/cm) MydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	3 eter:Y\$T_556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power (C) OR Turbidity of Groundw Turbidity meter: Pre-filtered Turbidity Pre-filtered Turbidity	ployed: ns: rater at time of t time of retriev arameters Upo P(mV) pH 9 9 9 5 ndwater Samp dity: UGI (09 14	retrieval (measured at n Retrieval: DO (mg/L) le (dispensed fr	Cond (mS/cm) Cond (mS/cm) MydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	Seter: YST 556
Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Particle Control Co	ployed: ns: rater at time of t time of retriev arameters Upo P(mV) pH 9 9 9 5 ndwater Samp dity: UGI (09 14	retrieval (measured at n Retrieval: DO (mg/L) le (dispensed fr	Cond (mS/cm) Cond (mS/cm) MydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	Seter: YST 556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power of Control of	ployed: ns: rater at time of t time of retriev arameters Upo P(mV) pH 9 9 9 5 ndwater Samp dity: UGI (09 14	retrieval (measured at n Retrieval: DO (mg/L) le (dispensed fr	Cond (mS/cm) Cond (mS/cm) MydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	Seter: YST 556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power of Control of	ployed: ns: rater at time of t time of retriev arameters Upo P(mV) pH 9 9 9 5 ndwater Samp dity: UGI (09 14	retrieval (measured at n Retrieval: DO (mg/L) le (dispensed fr	Cond (mS/cm) Cond (mS/cm) MydraSleeve Serial #:	wall: 12.5 Water quality me Serial #:	Seter: YST 556
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field Power (°C) OR Turbidity of Ground Turbidity meter: Pre-filtered Turbid Sample ID: Musicial Power (PC)	rater at time of t time of retrievarameters Upo P(mV) pH 9 9 9 5 ndwater Samp dity:	retrieval (measured an Retrieval: DO (mg/L) L L S le (dispensed fr (NTU)	Short Strokesured before retrieval): Cond (mS/cm) O S S om HydraSleeve Serial #: Post-filtered Tu	wall: 12.5 Water quality me Serial #:	Seter: YST 556



Site:	Cytec Havre	de Grace				
Location:	Havre de Gra	ice, Maryland				
Well ID:	mw-81	D				
Well Type:	☐ Monitoring	☐Other:				
Well Finish:	☐Stick Up	⊈Flush Mount	-			
Measuring Pt:	∕⊠Top of Cas	ing	☐Other (specify)	i		
Total Depth As	Constructed (ft b	TOC):	_Screened Interva	al (ft bTOC):		
Well Casing:	-	2_		PUC		
Well Screen:						
Deployment						
Date and Time	of Deployment:	Date:	9/13/2	Time:	1234	
Weather Condit	ions:	clear				
Depth to ground	dwater at time of	deployment:	9.14			
Total well depth	at time of deplo	yment:	38.15			
Dimensions of I	HydraSleeve™:	Length (in.)		Diameter (in.)		
Deployment Me	thod/Position of	Weight:	☐Bottom Anchor	: Weight attache	ed to bottom of	
			HydraSleeve™. V	-		
			☐Bottom Anchor	-		draSleeve™
			Weight suspende	d in well.	·	
			□Top-Down: We	ight attached to	top and bottom of	F
			HydraSleeve™. E	Bottom weight re	sts on well botton	١.
Deployment De	pth (Top of Hydra	aSleeve™) (ft bl	ГОС):			_0
Retrieval						
Date and Time o	of Retrieval:	Date:	1/14/	て Time:	1310	
Total # of days	deployed:	1				
Weather Condit		Clear				
Retrieval Metho	d:		Continuous P	ull (preferred)		
			☐ Short Strokes		9.06	
			ured before retrie	val):		
	at time of retriev	• *	πer retrieval):	38.46	,	
	Parameters Upo		T	144-4	YCT	556
	RP(mV) pH				eter: / 31	720
21.18 a	7.5/7.4			Serial #:		
Turbidity of Gro	oundwater Samp	le (dispensed fr	om HydraSleeve ^T	•		
Turbidity meter	:					
Pre-filtered Tur		(NŢU)	Post-filtered Tur			
Sample ID:	1W8D (091	<u>421</u> Replica	te ID:		Sample Time: _	1310
Notes/Observat	ions:)				
-						
Field Sampling	Technician: Nar	ne(s) and Comp	anv			
	King / Shwetha Sr		-	ov· Arcadis		



Site:	Cytec navie o	e Grace	
Location:	Havre de Grad	e, Maryland	
Well ID:	MW-85		
Well Type:	☐Monitoring	□Other:	
Well Finish:	•	Flush Mount	
Measuring Pt:	☑Top of Casir		□Other (specify):
_	•	-	Screened Interval (ft bTOC):
		2	
Well Casing: Well Screen:	Diameter:		iviaterial
	Diameter.		
Deployment			411212
Date and Time of I	-	Date:	4/13/2\ Time: 1232
Weather Condition			1.7.1
Depth to groundw			4.74
Total well depth at	time of deploy	ment:	17.35
Dimensions of Hy	draSleeve™:	Length (in.)	Diameter (in.)
Deployment Metho	od/Position of \	Veight:	□Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom. □Bottom Anchor: Weight attached to bottom of HydraSleeve™ Weight suspended in well.
			□Top-Down: Weight attached to top and bottom of HydraSleeve™. Bottom weight rests on well bottom.
Deployment Depth	(Top of Hydra	Sleeve™) (ft bī	FOC):
Retrieval			
Date and Time of F	Potrioval:	Date:	9/14/21 Time: 1320
Total # of days dep		f Date.	Time. 1-20
Weather Condition	-	clear	
Retrieval Method:	_		☑ Continuous Puil (preferred)
			☐ Short Strokes
Depth to groundwa	ater at time of	etrieval (meas	ured before retrieval): 4.32
Total well depth at			
Downhole Field Pa			10110111111
	-		Cond (mS/cm) Water quality meter: VII 556
		DO (mg/L)	Cond (ms/cm) Water quality meter.
	8,3 8.0	1.00	
Turbidity of Groui	ndwater Sampl	e (dispensed fr	om HydraSleeve™):
Turbidity meter: _			Serial #:
Pre-filtered Turbic	lity:	(NTU)	Post-filtered Turbidity: (NTU)
Sample ID: Mw	185/08/42	ر Replica	te ID: DUPOI (09/421) Sample Time: 1370
Notes/Observation	ns:		
	abalalası N	e(s) and Comp	



Site:	Cytec Havre de Grace	A
Location:	Havre de Grace, Maryland	
Well ID:	MM-151)	
Well Type:	☐Monitoring ☐Other:	
Well Finish:	☐Stick Up	
Measuring Pt:	√ Top of Casing	Other (specify):
Total Depth A	s Constructed (ft bTOC):	Screened Interval (ft bTOC):
Well Casing:	Diameter: 2	Material: S S
Well Screen:	Diameter:	
Deployment		
Date and Time	of Deployment: Date	9/13/21 Time: 1039
Weather Cond	itions: Synny	
Depth to grou	ndwater at time of deployment:	14.72
Total well dep	th at time of deployment:	27,40
Dimensions o	f HydraSleeve™: Length (in.)	Diameter (in.)
Deployment M	ethod/Position of Weight:	Sottom Anchor: Weight attached to bottom of
		HydraSleeve™. Weight rests on well bottom.
		☐Bottom Anchor: Weight attached to bottom of HydraSleeve™
		Weight suspended in well.
		☐Top-Down: Weight attached to top and bottom of
		HydraSleeve™. Bottom weight rests on well bottom.
Deployment D	epth (Top of HydraSleeve™) (ft b	TOC):
Retrieval		a halo
Date and Time	- f D-4-f	" (111 1") 1 Time: / / 106/
		9/14/21 Time: 150 1055
Total # of days	deployed:	
Weather Cond	deployed:	
	deployed:	Continuous Pull (preferred)
Weather Cond Retrieval Meth	itions: (lea	☑ Continuous Pull (preferred) ☐ Short Strokes
Weather Cond Retrieval Meth Depth to groun	itions: od: deployed: (lea	Continuous Pull (preferred) ☐ Short Strokes ured before retrieval):
Weather Cond Retrieval Meth Depth to groun Total well dep	deployed: itions: od: dwater at time of retrieval (measured at time of	Continuous Pull (preferred) ☐ Short Strokes ured before retrieval):
Weather Cond Retrieval Meth Depth to groun Total well depth Downhole Fiel	itions: od: ndwater at time of retrieval (measured at dependent of the de	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval):
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C)	itions: od: Individual at time of retrieval (measured at time of retrieval (measured at department) ORP(mV) pH DO (mg/L)	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Water quality meter:
Weather Cond Retrieval Meth Depth to groun Total well dep Downhole Fiel Temp (°C)	itions: od: ndwater at time of retrieval (measured at dependent of the de	Cond (mS/cm)
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C)	deployed: itions: od: Itions: od: Indwater at time of retrieval (measured at time of retrieval (measured at department) ORP(mV) PH DO (mg/L) 129, 7600 2, 26 roundwater Sample (dispensed for	Cond (mS/cm)
Weather Cond Retrieval Meth Depth to groun Total well dep Downhole Fiel Temp (°C)	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) 129, 7 6 00 2, 26 roundwater Sample (dispensed feer:	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: Tom HydraSleeve TM):
Weather Cond Retrieval Meth Depth to groun Total well dep Downhole Fiel Temp (°C)	itions: od: Indwater at time of retrieval (measured at time of retrieval (measured at Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) Toundwater Sample (dispensed fer: Inbidity:(NTU)	Cond (mS/cm) Cond (mS/cm) Cond HydraSleeve TM): Serial #:
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C) \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at d Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) PH DO (mg/L) roundwater Sample (dispensed for: urbidity: MEDIZ D (1981/421) Replications	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: rom HydraSleeve TM): Serial #: Post-filtered Turbidity: (NTU)
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C) \frac{7}{4} Turbidity of G Turbidity meth Pre-filtered Turbidity	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at d Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) PH DO (mg/L) roundwater Sample (dispensed for: urbidity: MEDIZ D (1981/421) Replications	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: rom HydraSleeve TM): Serial #: Post-filtered Turbidity: (NTU)
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C) \frac{7}{4} Turbidity of G Turbidity meth Pre-filtered Turbidity	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at d Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) PH DO (mg/L) roundwater Sample (dispensed for: urbidity: MEDIZ D (1981/421) Replications	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: rom HydraSleeve TM): Serial #: Post-filtered Turbidity: (NTU)
Weather Cond Retrieval Meth Depth to groun Total well dept Downhole Fiel Temp (°C) \frac{7}{4} Turbidity of G Turbidity meth Pre-filtered Turbidity	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at d Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) PH DO (mg/L) roundwater Sample (dispensed for: urbidity: MEDIZ D (1981/421) Replications	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: rom HydraSleeve TM): Serial #: Post-filtered Turbidity: (NTU)
Weather Cond Retrieval Meth Depth to groun Total well dep Downhole Fiel Temp (°C) \\T. \(\frac{1}{2} \) Turbidity of G Turbidity meth Pre-filtered Total Sample ID:	itions: od: Indivater at time of retrieval (measured at time of retrieval (measured at d Parameters Upon Retrieval: ORP(mV) pH DO (mg/L) PH DO (mg/L) roundwater Sample (dispensed for: urbidity: MEDIZ D (1981/421) Replications	Continuous Pull (preferred) Short Strokes ured before retrieval): Ifter retrieval): Cond (mS/cm) Serial #: rom HydraSleeve TM): Serial #: Post-filtered Turbidity: INTS D Sample Time:



Site:	Cytec Ha		Olacc		
Location:	Havre de	Grace,	Maryland		
Well ID:	MW-	-125	5		
Well Type:	□Monito	ring [Other:		
Well Finish:	☐Stick U	_	lCuier. lElush Mount [□]		
Measuring Pt:	☐Top of			☐Other (specify):	
•	•			Screened Interval (ft	
Well Casing:		•			
Well Screen:			7	iviateriai.	
	Diami	eter		-	
Deployment	f Damlerman	_4.	Deter	01.2121	Times \0.141
Date and Time of Weather Conditi		nt:	Date:	9/13/21	Time: 10 41
				8.28	
Depth to ground Total well depth				1735	
i otal well depth	at time or u	epioyiii	lent.		
Dimensions of H	lydraSleeve	™: Le	ngth (in.)	Di	ameter (in.)
Deployment Met	hod/Positio	n of We	eight:	₩Bottom Anchor: We	eight attached to bottom of
				•	ht rests on well bottom.
				☐Bottom Anchor: We	eight attached to bottom of HydraSleeve™
				Weight suspended in	well.
				☐Top-Down: Weight	attached to top and bottom of
				HydraSleeve™. Botto	m weight rests on well bottom.
Deployment Dep	th (Top of H	lydraSI	eeve™) (ft b1	roc):	
Retrieval				7	
Retrieval Date and Time o	f Retrieval:		Daţe:	9/14/2	7 Time: /02/5
			\mathcal{L}		7 Time: 10215
Date and Time o	eployed:	_	Date:		7 Time: /045
Date and Time o Total # of days d	eployed: ons:		\mathcal{L}		
Date and Time o Total # of days d Weather Condition	eployed: ons:	_	\mathcal{L}	~	preferred)
Date and Time o Total # of days d Weather Condition Retrieval Method	leployed: ons: i:	e of ret	Clea	Ex Continuous Pull (p	referred)
Date and Time o Total # of days d Weather Condition Retrieval Method	eployed: ons: i: water at tim		C/e	Continuous Pull (p	preferred)
Date and Time o Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field	eployed: ons: i: water at tim at time of re Parameters	etrieval Upon F	crieval (measured a	© Continuous Pull (p ☐ Short Strokes ured before retrieval): fter retrieval):	8.27 /6.92
Date and Time o Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth	eployed: ons: i: water at tim at time of re Parameters RP(mV)	etrieval Upon F pH	crieval (measured a	Continuous Pull (p Short Strokes ured before retrieval): fter retrieval): Cond (m\$/cm) Wate	8. 2.7 16.92 er quality meter: YST 556
Date and Time o Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Ol	eployed: ons: i: water at tim at time of re Parameters RP(mV)	etrieval Upon F	rieval (measured a	Continuous Pull (p Short Strokes ured before retrieval): fter retrieval): Cond (m\$/cm) Wate	8.27 /6.92
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Temp (°C)	eployed: ons: i: water at tim at time of re Parameters RP(mV)	etrieval Upon F pH ー コン	rieval (measured at Retrieval:	Continuous Pull (p Short Strokes ured before retrieval): fter retrieval): Cond (m\$/cm) Wate	8. 2.7 16.92 er quality meter: YST 556
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Gro	eployed: ons: d: water at time at time of re Parameters RP(mV) 13.1 (etrieval Upon F pH ーコン ample (rieval (measured at Retrieval: DO (mg/L) O , % (dispensed from the control of t	Cond (m\$/cm) Cond (m\$/cm) Cond HydraSleeve TM):	er quality meter: YSI 556
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter:	eployed: ons: d: water at tim at time of re Parameters RP(mV) 13.10	etrieval Upon F pH デコン ample (rieval (measured at Retrieval: DO (mg/L) O , % (dispensed from	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #:	er quality meter: YSI 556
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field of Temp (°C) Of Turbidity of Ground Turbidity meter:	eployed: ons: d: water at tim at time of re Parameters RP(mV) 13.1 (undwater Sa	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , % (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #: Post-filtered Turbidi	8. 2.7 16. 9.2 er quality meter:
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter: Pre-filtered Turk Sample ID:	eployed: ons: i: water at tim at time of re Parameters RP(mV) 13.) undwater Sa	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , %% (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #:	er quality meter: YSI 556
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field of Temp (°C) Of Turbidity of Ground Turbidity meter:	eployed: ons: i: water at tim at time of re Parameters RP(mV) 13.) undwater Sa	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , %% (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #: Post-filtered Turbidi	8. 2.7 16. 9.2 er quality meter:
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter: Pre-filtered Turk Sample ID:	eployed: ons: i: water at tim at time of re Parameters RP(mV) 13.) undwater Sa	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , %% (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #: Post-filtered Turbidi	8. 2.7 16. 9.2 er quality meter:
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter: Pre-filtered Turk Sample ID:	eployed: ons: i: water at tim at time of re Parameters RP(mV) 13.) undwater Sa	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , %% (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #: Post-filtered Turbidi	8. 2.7 16. 9.2 er quality meter:
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter: Pre-filtered Turk Sample ID:	eployed: ons: i: water at tim at time of re Parameters RP(mV) 13.) [undwater Saladity:	etrieval Upon F pH デラン ample (rieval (measured at Retrieval: DO (mg/L) O , %% (dispensed from (NTU)	Continuous Pull (pull Short Strokes ured before retrieval): Cond (m\$/cm) Wate Serial #: Serial #: Post-filtered Turbidi	8. 2.7 16. 9.2 er quality meter:
Date and Time of Total # of days of Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Total well depth Downhole Field Temp (°C) Of Turbidity of Ground Turbidity meter: Pre-filtered Turk Sample ID:	eployed: ons: d: water at time at time of re Parameters RP(mV) undwater Sa bidity:	etrieval Upon F pH ample (rieval (measured at Retrieval: DO (mg/L) O, % (dispensed from Replication of the Repli	Cond (mS/cm) Cond (mS/cm) Ser om HydraSleeve TM): Serial #: Post-filtered Turbidite ID:	8. 2.7 16. 9.2 er quality meter:



Site:	Cytec Havre de				
Location:	Havre de Grac				
Well ID:	THE REST	F MM-1	3D		
Well Type:	☐Monitoring [□Other:			
Well Finish:	☐Stick Up	Flush Mount			
Measuring Pt:	☑Top of Casin	g	☐Other (specify	:	
Total Depth As C	onstructed (ft bT	OC):	Screened Interv	al (ft bTOC):	
Well Casing:	Diameter:			55	5
Well Screen:	Diameter:		- :		
Deployment	Ş 				
Date and Time of	Deployment:	Date:	9/13/21	Time:	1021
Weather Condition	ons: 5	unnu			
Depth to ground	water at time of d	leployment:	12.09		
Total well depth			31,59		
Dimensions of H	ydraSleeve™: L	.ength (in.)		Diameter (in.)	
	- nod/Position of W		to have Anales		
Deployment wet	iou/Position of V	veigiit.	Bottom Ancho	r: vveignt attachet Neight rests on w	
			•	_	to bottom of HydraSleeve ^π
			Weight suspende	-	to bottom or rivaraoreeve
					op and bottom of
				•	its on well bottom.
Deployment Dep	th (Top of Hydras	Sleeve™) (ft b]	•		
Deployment Bep	in (rop or riyara	, (it is			
Retrieval				,	
Retrieval Date and Time of	Retrieval:	Date:	9/14/	2 (Time:	1010
Date and Time of		Date:	9/14/	2 Time:	1010
Date and Time of Total # of days d Weather Condition	eployed: ons:	Date:		Time.	(010
Date and Time of Total # of days d	eployed: ons:		☑ Continuous F	uil (preferred)	(010
Date and Time of Total # of days d Weather Condition Retrieval Method	eployed: _ ons: _ :	clear	☑ Continuous F☑ Short Strokes	uil (preferred)	
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground	eployed: ons: : water at time of r	clear	☑ Continuous F☑ Short Strokesured before retrie	ruil (preferred)	
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth	eployed: ons: : water at time of r	etrieval (meas	☑ Continuous F☑ Short Strokesured before retrie	ruil (preferred)	
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I	eployed: ons: : water at time of r at time of retrieva	etrieval (meas al (measured a l Retrieval:	☑ Continuous F ☐ Short Strokes ured before retrie fter retrieval):	uil (preferred) val): 12.0	7
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I	eployed: ons: : water at time of rat time of retrieva Parameters Upon	etrieval (measial (measured an Retrieval:	☑ Continuous F ☐ Short Strokes ured before retrie fter retrieval):	wal): 12.0	
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I	eployed: ons: : water at time of r at time of retrieva	etrieval (measial (measured an Retrieval:	☑ Continuous F ☐ Short Strokes ured before retrie fter retrieval):	uil (preferred) val): 12.0	7 eter: <u>YSI</u> 556
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I	eployed: ons: : water at time of r at time of retrieva Parameters Upon RP(mV) pH	etrieval (meas al (measured a a Retrieval: DO (mg/L)	☑ Continuous F ☐ Short Strokes ured before retrie fter retrieval): Cond (mS/cm)	val): 12.0 31.62 Water quality me	7
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I	eployed: ons: : water at time of r at time of retrieva Parameters Upon RP(mV) pH	etrieval (meas al (measured a a Retrieval: DO (mg/L)	Cond (mS/cm)	val): 12.0 31.62 Water quality me	7 eter: <u>YSI</u> 556
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI US 15 1 Turbidity of Gro Turbidity meter: Pre-filtered Turb	eployed: ons: : water at time of rat time of retrieval Parameters Upon RP(mV) pH	etrieval (measal (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Com HydraSleeve	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI US 15 1	eployed: ons: : water at time of rat time of retrieval Parameters Upon RP(mV) pH	etrieval (measial (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Com HydraSleeve	wal): 12.0 31.62 Water quality me Serial #:	7 eter: <u>YSI</u> 556
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI US 15 1 Turbidity of Gro Turbidity meter: Pre-filtered Turb	eployed: ons: : water at time of retrieval Parameters Upon RP(mV) pH RP(QQ 4.6) undwater Sample	etrieval (measial (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond HydraSleeve Serial #: Post-filtered Tu	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI Turbidity of Gro Turbidity meter: Pre-filtered Turb Sample ID: My	eployed: ons: : water at time of retrieval Parameters Upon RP(mV) pH RP(QQ 4.6) undwater Sample	etrieval (measial (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond HydraSleeve Serial #: Post-filtered Tu	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI Turbidity of Gro Turbidity meter: Pre-filtered Turb Sample ID: My	eployed: ons: : water at time of retrieval Parameters Upon RP(mV) pH RP(QQ 4.6) undwater Sample	etrieval (measial (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond HydraSleeve Serial #: Post-filtered Tu	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI Turbidity of Gro Turbidity meter: Pre-filtered Turb Sample ID: My	eployed: ons: : water at time of retrieval Parameters Upon RP(mV) pH RP(QQ 4.6) undwater Sample	etrieval (measial (measured an Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond HydraSleeve Serial #: Post-filtered Tu	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)
Date and Time of Total # of days d Weather Condition Retrieval Method Depth to ground Total well depth Downhole Field I Temp (°C) OI Selection Of Turbidity of Gro Turbidity meter: Pre-filtered Turb Sample ID: Miles Notes Observation	eployed: ons: : water at time of retrieval Parameters Upon RP(mV) pH RP Q 4 6 undwater Sample	etrieval (measal (measured al Retrieval: DO (mg/L) (dispensed file) (NTU) Replica	Continuous F Short Strokes ured before retrie fter retrieval): Cond (mS/cm) Com HydraSleeve Serial #: Post-filtered Tu te ID:	wal): 12.0 31.62 Water quality me Serial #:	7- eter: YS I 556 (NTU)



Site:	Cytec Havre	de Grace	
Location:	Havre de Gra	ce, Maryland	=======================================
Well ID:	WM-1	4	
Well Type:	☐Monitoring	☐Other:	
Well Finish:	☐Stick Up	Flush Mount	:
Measuring Pt:	☑ Top of Casi	ng	Other (specify):
Total Depth As C	-	_	Screened Interval (ft bTOC):
Well Casing:	Diameter:	2	Material: 55
Well Screen:	Diameter:		
Deployment			
Date and Time of	Deployment:	Date:	: 4/13/21 Time: \347
Weather Condition		clear	
Depth to grounds	water at time of	deployment:	11.08
Total well depth a	at time of deplo	yment:	35.47
Dimensions of Hy	ydraSleeve™:	Length (in.)	Diameter (in.)
Deployment Meth			
popiojinent meti			☐Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom.
			□Bottom Anchor: Weight attached to bottom of HydraSleeve [™]
			Weight suspended in well.
			☐Top-Down: Weight attached to top and bottom of
			HydraSleeve™. Bottom weight rests on well bottom.
Deployment Dept	h (Top of Hydra	aSleeve™) (ft b1	TOC):
Retrieval			7 1
Retrieval Date and Time of	Retrieval:	Date:	9/15/21 Time: 0900
		2	9/15/21 Time: 0900
Date and Time of Total # of days de Weather Conditio	eployed: ens:		
Date and Time of Total # of days de	eployed: ens:	2	
Date and Time of Total # of days de Weather Conditio Retrieval Method	eployed: ns:	clear	☐ Continuous Pull (preferred) ☐ Short Strokes
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw	eployed: ns: : vater at time of	Z Clear	☐ Continuous Pull (preferred) ☐ Short Strokes ured before retrieval):
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a	eployed: ons: vater at time of at time of retriev	Clear clear retrieval (measured a	☐ Continuous Pull (preferred) ☐ Short Strokes
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P	eployed: ons: vater at time of at time of retriev	retrieval (measured an Retrieval:	© Continuous Pull (preferred) □ Short Strokes ured before retrieval): 11 3 3 3 4 3 4
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P	eployed: ons: vater at time of time of retriev erameters Upo	retrieval (measured an Retrieval:	Cond (mS/cm) Water quality meter: $\frac{M}{M}$ Continuous Pull (preferred) Short Strokes 1 1 3 3 Short Strokes 1 3 3 Cond (mS/cm) Water quality meter: $\frac{M}{M}$
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR	vater at time of at time of retrievarameters Upo	retrieval (measural (measural an Retrieval:	Cond (mS/cm)
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR	vater at time of at time of retrievarameters Upo	retrieval (measural (measural an Retrieval:	Cond (mS/cm) Water quality meter: $\frac{M}{M}$ Continuous Pull (preferred) Short Strokes 1 1 3 3 Short Strokes 1 3 3 Cond (mS/cm) Water quality meter: $\frac{M}{M}$
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR	vater at time of at time of retrievarameters Upo P(mV) pH 1 2 6 3	retrieval (measural (measural (measured an Retrieval: DO (mg/L) 1 83	Cond (mS/cm) Cond (mS/cm) Cond HydraSleeve TM): Serial #: Serial #:
Date and Time of Total # of days de Weather Conditio Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR 17:85 & Turbidity of Grounds	vater at time of a time of retrievarameters Upo P(mV) PH	retrieval (measured an Retrieval: DO (mg/L) N & 3 I & 3 I & 6 (NTU)	Cond (mS/cm) Cond (mS/cm) Cond HydraSleeve TM): Continuous Pull (preferred) (pr
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Turbidity meter:	eployed: ons: vater at time of at time of retriev exameters Upo P(mV) pH 1.2 (6.4) andwater Samp	retrieval (measured at n Retrieval: DO (mg/L) O (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Cond HydraSleeve TM): Serial #: Serial #:
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Groun	eployed: ons: vater at time of at time of retriev arameters Upo P(mV) pH 1.2 (6.4) Indwater Samp	retrieval (measured at n Retrieval: DO (mg/L) O (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbidity:(NTU)
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Turbidity meter: Pre-filtered Turbing Sample ID:	eployed: ons: vater at time of at time of retriev arameters Upo P(mV) pH 1.2 (6.4) Indwater Samp	retrieval (measured at n Retrieval: DO (mg/L) O (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbidity:(NTU)
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Turbidity meter: Pre-filtered Turbing Sample ID:	eployed: ons: vater at time of at time of retriev arameters Upo P(mV) pH 1.2 (6.4) Indwater Samp	retrieval (measured at n Retrieval: DO (mg/L) O (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbidity:(NTU)
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Turbidity meter: Pre-filtered Turbing Sample ID:	eployed: ons: vater at time of at time of retriev arameters Upo P(mV) pH 1.2 (6.4) Indwater Samp	retrieval (measured at n Retrieval: DO (mg/L) O (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbidity:(NTU)
Date and Time of Total # of days de Weather Condition Retrieval Method: Depth to groundw Total well depth a Downhole Field P Temp (°C) OR Turbidity of Groundw Turbidity meter: Pre-filtered Turbing Sample ID:	eployed: ons: evater at time of at time of retrievarameters Upo P(mV) pH 1.2 (6.4) Indwater Samp idity: ons:	retrieval (measural (measural (measured an Retrieval: DO (mg/L) O (mg/L) Replica	Continuous Pull (preferred) Short Strokes ured before retrieval): Street retrieval: Cond (mS/cm) Serial #: Tom HydraSleeveTM): Serial #: Post-filtered Turbidity: Sample Time: Sample Time:



Site:	Cytec navie t	de Grace					
Location:	Havre de Gra	ce, Maryland					
Well ID:	MW-14	LI					
Well Type:	□Monitoring	□Other:					
Well Finish:	☐Stick Up	Flush Mount					
	☐ Top of Casi		☐Other (specify	١٠			
Measuring Pt:	=	_				-	
Total Depth As C	•	100	-	al (# bTOC):			
Well Casing:		_2_	Material:	FUL			
Well Screen:	Diameter:		-				
Deployment						4	
Date and Time of	Deployment:	, Date:	7/13/2	() Tim	e: \3'	75	
Weather Condition	ns:	clear					
Depth to groundy	vater at time of	deployment:	13.77				
Total well depth a	t time of deplo	yment:	25,15				
Di	rdua Classica TMs	Longth (in)		Diameter (i	2)		
Dimensions of Hy	rurasieeve '''':	Lengin (in.)		Diameter (ii			
Deployment Meth	od/Position of	Weight:	☐Bottom Ancho	-			
			HydraSleeve™.	Weight rests o	n well botto	om.	
			☐Bottom Ancho	r: Weight atta	ched to bott	om of Hyd	raSleeve™
			Weight suspend	ed in well.			
			□Top-Down: W	eight attached	to top and	bottom of	
			HydraSleeve™.	Bottom weight	rests on w	ell bottom.	
Deployment Dept	h (Top of Hydra	aSleeve™) (ft b7	TOC):				
		, ,					
Retrieval				75			
Date and Time of	Potrioval:	Date:	9/15	/2/ Tim	Α.	0750	
Total # of days de		2-	- 17.5	70 1111		130	
Weather Conditio		1/0-					
Retrieval Method:		CIEAU	☑ Continuous F	Pull (preferred)			
Tetrieval metriod.	•		☐ Short Stroke:				
Depth to groundy	otov ot time of	retrieval (mana			13	.65	
		•				102	
Total well depth a			iter retrieval):	49-1)		
Downhole Field P			1	i	_	YZI	556
Temp (°C) OR						151	
19.45 9	3.0 7.3	6 3.04	0.385	Serial #:			
Turbidity of Grou	ındwater Samp	le (dispensed fr	om HydraSleeve	[™]):			
Turbidity meter:			Serial #:				
Pre-filtered Turbi		(NTU)	Post-filtered Tu			NTU)	
Sample ID:					\' Sample	,	0750
		Keplica	ite ID:		Sample	inne: _	
Notes/Observation	ons:						
		43					
Field Sampling To Name(s): Anna Ki				_{any:} Arcadis			



Site:	Cytec Havre de Grace
Location:	Havre de Grace, Maryland
Well ID:	miv -16
Well Type:	☐Monitoring ☐Other:
Well Finish:	☐ Stick Up
Measuring Pt:	☐ Top of Casing ☐ Other (specify):
Total Depth As (Constructed (ft bTOC):Screened Interval (ft bTOC):
Well Casing:	Diameter: 2 Material: SS
Well Screen:	Diameter:
Deployment	
Date and Time o	f Deployment: Date: 4/13/21 Time: \325
Weather Conditi	
Depth to ground	water at time of deployment:
Total well depth	at time of deployment: 36.39
Dimensions of H	lydraSleeve™: Length (in.) Diameter (in.)
Deployment Met	hod/Position of Weight:
	HydraSleeve™. Weight rests on well bottom.
	☐Bottom Anchor: Weight attached to bottom of HydraSleeve™
	Weight suspended in well.
	☐Top-Down: Weight attached to top and bottom of
	HydraSleeve™. Bottom weight rests on well bottom.
Deployment Dep	oth (Top of HydraSleeve™) (ft bTOC):
Retrieval	
Date and Time o	
Total # of days d	
Weather Conditi Retrieval Method	
Retrieval Metrico	Short Strokes
Denth to ground	water at time of retrieval (measured before retrieval):
Total well depth	at time of retrieval (measured after retrieval): 36.51
	Parameters Upon Retrieval:
	RP(mV) pH DO (mg/L) Cond (mS/cm) Water quality meter: YSISSE
	34.5 9.17 3.07 0.23) Serial #:
1 1 1	oundwater Sample (dispensed from HydraSleeve™):
Turbidity meter	: Serial #:
Pre-filtered Turl	bidity:(NTU) Post-filtered Turbidity:(NTU)
Sample ID:	Sample Time: 1350
Notes/Observati	ions:
	6
Field Sampling	Technician: Name(s) and Company
I ICIA AGIIIMIIIM	restriction transfel and equibert



Site:	Cytec Havre de	Orace			
Location:	Havre de Grace	, Maryland			
Well ID:	MW-18				
Well Type:	☐Monitoring ☐	Other:			-
Well Finish:	_	Flush Mount			
Measuring Pt:	Top of Casing		□Other (specify):		
Total Depth As Co			Screened Interval (ft bTO	:):	
Well Casing:		2	Material:		
Well Screen:	Diameter:				
Deployment					
Date and Time of I	Deployment:	Date:	9/13/21	Time: 1432	
Weather Condition		cles		1.02	
Depth to groundwa	ater at time of de	eployment:	9.33		
Total well depth at			31.41		
Dimensions of Hyd			Diamet	ar (in)	
_			Diamet	a (III.)	
Deployment Metho	od/Position of W	eight:	☐Bottom Anchor: Weight		
			HydraSleeve™. Weight re		
				attached to bottom of Hydras	sleeve™
			Weight suspended in well.	had to ton and better of	
			☐Top-Down: Weight attack HydraSleeve™. Bottom we		
Denleyment Denth	(Top of Hydras)	leeve™\ (# bT	OC):	_	
Deployment Depth	(Top of flydras	ieeve) (it bi	JUJ		
Potrioval					
	Potrioval:	Date:	alista	Time: 0027	
Date and Time of F		Date:	9/15/21	Time: 09 30	
Date and Time of F Total # of days dep	oloyed:	1		Time: 0930	
Date and Time of F Total # of days dep	oloyed:	Date:	9/15/2 (E Continuous Pull (prefer		
Date and Time of F Total # of days dep Weather Condition	oloyed:	1	lend		
Date and Time of F Total # of days dep Weather Condition Retrieval Method:	oloyed:	mry C	E Continuous Pull (prefer		
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa	oloyed: Se:	trieval (measu	E Continuous Pull (prefer ☐ Short Strokes		
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	ater at time of re	trieval (measured at Retrieval:	E Continuous Pull (prefer ☐ Short Strokes ured before retrieval): [ter retrieval]:	red)	
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	ater at time of re	trieval (measured at Retrieval:	E Continuous Pull (prefer ☐ Short Strokes ured before retrieval): [ter retrieval]:		<u> </u>
Date and Time of F Total # of days den Weather Condition Retrieval Method: Depth to groundwa Total well depth at	ater at time of retime of retrameters Upon P	trieval (measured at Retrieval:	E Continuous Pull (prefer □ Short Strokes ured before retrieval): fter retrieval): Cond (mS/cm) Water qu	red)	<u></u>
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF	ater at time of retrieval arameters Upon I	trieval (measured at Retrieval:	E Continuous Pull (prefer □ Short Strokes ured before retrieval): fter retrieval): Cond (mS/cm) Water qu	ality meter: YST 55	<u>6</u>
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF	ater at time of retrieval arameters Upon I	trieval (measured at Retrieval:	Cond (mS/cm) Cond (mS/cm) Water qu Serial #:	ality meter: <u>YST 55</u>	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Ground Turbidity meter:	ater at time of retime of retrieval trameters Upon IP (mV) pH	trieval (measured at (measured at DO (mg/L)	Cond (mS/cm) Cond (mS/cm) Water qu Serial #: Serial #:	ality meter: YST 55	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid	ater at time of retime of retrieval arameters Upon P(mV) pH	trieval (measured at Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Water qu Serial #: Post-filtered Turbidity:	ality meter: YST 55	<u>6</u>
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of retime of retrieval arameters Upon P(mV) pH andwater Sample	trieval (measured at Retrieval: DO (mg/L) (dispensed from (NTU)	Cond (mS/cm) Cond (mS/cm) Water qu Serial #: Post-filtered Turbidity:	ality meter: YST 55	_
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid	ater at time of retime of retrieval arameters Upon P(mV) pH andwater Sample	trieval (measured at (measured at Retrieval: DO (mg/L) (dispensed from (NTU) Replication	Continuous Pull (prefer Short Strokes ared before retrieval): Cond (mS/cm) Cond (mS/cm) Water que Serial #: Serial #: Post-filtered Turbidity:	ality meter:	93 <i>0</i>
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of retime of retrieval arameters Upon P(mV) pH andwater Sample	trieval (measured at (measured at Retrieval: DO (mg/L) (dispensed from (NTU) Replication	Continuous Pull (prefer Short Strokes ared before retrieval): Cond (mS/cm) Cond (mS/cm) Water que Serial #: Serial #: Post-filtered Turbidity:	ality meter:	- 930
Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of retime of retrieval arameters Upon P(mV) pH andwater Sample	trieval (measured at (measured at Retrieval: DO (mg/L) (dispensed from (NTU) Replication	Cond (mS/cm) Cond (mS/cm) Water qu Serial #: Post-filtered Turbidity:	ality meter:	_
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of retime of retrieval arameters Upon IP(mV) pH andwater Sample lity: 18 0915	trieval (measured at (measured at Retrieval: DO (mg/L) (dispensed from (NTU) Replication	Continuous Pull (prefer Short Strokes ared before retrieval): Cond (mS/cm) Cond (mS/cm) Water que Serial #: om HydraSleeve TM): Serial #: Post-filtered Turbidity: te ID: COND COND COND COND COND COND COND COND	ality meter:	- 930



Site:	Cytec Hav	re de	Grace					
Location:			, Maryland					
Well ID:	MW-191	D1						
Well Type:	⊠Monitori	na 🗆	Other:					
Well Finish:	☐Stick Up	_	Flush Mount					
Measuring P				☐Other (specify	v):			
Total Depth	As Constructed (-		Screened Inter				
Well Casing:	·		2	Material:				
Well Screen:			TAL N		1 1			
Deployment								
	ne of Deployment	t:	Date:	10/28/2021		Time:	1300	
Weather Cor			sunny, 6		700	111101	613324V	
Depth to gro	undwater at time	of de		policy (1 10		-
	pth at time of de				T. No.		74.72 1.75 1.5	21
Dimensions	of HydraSleeve ¹¹	: Le	ength (in.)		Diamet	er (in.)		
	Method/Position			Weight suspend □Top-Down: W HydraSleeve™.	Weight re or: Weight ded in well. eight attac	sts on well attached to ched to top	bottom. bottom of Hydras and bottom of	Sleeve™
Retrieval								
	e of Retrieval:		Date:	10/29/=	21	Time:	000	
Total # of day		-	. \ 1 -1	·				_
Weather Con Retrieval Met		CI	ouzy/rain	Continuous I	Dull (profe	mad)		
Ketrievai wie	illou.			☐ Short Stroke		nea)		
D 4h 4a	undwater at time	-5	trioval (manag		_	4.94		
Depth to gro	pth at time of ret	rioval	(mossured a	fter retrieval.	14.7°	2		
Downhala El	eld Parameters U	Inon I	(measured a	iter retrieval).	1.1-1-			
					Jur-1		Hacita 15	2 2
Temp (°C)		рН	DO (mg/L)				er: Horiba US	2-2
15-12		.12	Name and Address of the Owner, where the Owner, which the	0.757	Serial #			
	Groundwater Sa							
Turbidity me	ter: Honba	U52	1-2	Serial #:		113		
Pre-filtered	Turbidity: 8 4	3	(NTU)	Post-filtered Tu			(NTU)	
Sample ID:	DMM-14D	1 (102	(121) Replica	te ID:		S	ample Time: 10	00
Notes/Obser	vations:			7/				
Field Samplin	ng Technician: N	Vame(s) and Comp		ny: Arcad	is		
-	1							



Site:	Cytec	Havre de	Grace	
Location:	Havre	de Grace	, Maryland	
Well ID:	WW.	- 50C)	
Well Type:	□Moni	itoring [Other:	
Well Finish:	Stick	-	Flush Mount	
Measuring Pt:		of Casing		□Other (specify):
•		_		Screened Interval (ft bTOC):
Well Casing:		•	2	
Well Screen:				- FVC
	5.0			£
Deployment Date and Time	of Donlove	ont:	Date:	9/13/21 Time: 14/6
Weather Condit		ient.	c/ea	
Depth to groun		ime of de		23.24
Total well depth				46.75
Dimensions of	HydraSlee	ve™: Le	ength (in.)	Diameter (in.)
Deployment Me	thod/Posit	ion of W	eight:	☐Bottom Anchor: Weight attached to bottom of
				HydraSleeve™. Weight rests on well bottom,
				☐Bottom Anchor: Weight attached to bottom of HydraSleeve™
				Weight suspended in well.
				☐Top-Down: Weight attached to top and bottom of
				HydraSleeve™. Bottom weight rests on well bottom.
Deployment De	pth (Top o	f HydraS	leeve™) (ft b1	roc):
Retrieval				
Date and Time of	of Retrieva	l:	Date:	9/15/2 Time: 0908
Total # of days	deployed:	G		
Weather Condit	ions:	Sy	my/le	W
Retrieval Metho	d:),	Continuous Pull (preferred)
				☐ Short Strokes
Depth to ground	dwater at t	ime of re	trieval (meası	ured before retrieval): <u>23.3</u>
Total well depth	at time of	retrieval	(measured a	fter retrieval): 46,94
Downhole Field	Paramete	rs Upon I	Retrieval:	
(0.0)	DD/1/1	pН	DO (mg/L)	Cond (mS/cm) Water quality meter: 151 556
Temp (°C)	RP(mV)			
	RP(mv)	8.30		() : 11 (Serial #:
15.11	05.6	8.30	6.5)	Serial #:
Turbidity of Gr	oS . 6 oundwater	る。30 Sample	(dispensed fr	Serial #:
Turbidity of Grant	os 6 oundwater	る。30 Sample	(dispensed fr	Serial #:Serial #:
Turbidity of Gro	os, 6 oundwater r: bidity:	る。30 Sample	(dispensed fr	Serial #:(NTU)
Turbidity of Gro Turbidity meter Pre-filtered Tur Sample ID:	oundwater r: rbidity: //ພ zo D/	る。30 Sample	(dispensed fr	Serial #:Serial #:
Turbidity of Gro	oundwater r: rbidity: //ພ zo D/	る。30 Sample	(dispensed fr	Serial #:(NTU)
Turbidity of Gro Turbidity meter Pre-filtered Tur Sample ID:	oundwater r: rbidity: //ພ zo D/	る。30 Sample	(dispensed fr	Serial #:(NTU)
Turbidity of Gro Turbidity meter Pre-filtered Tur Sample ID:	oundwater r: rbidity: //ພ zo D/	る。30 Sample	(dispensed fr	Serial #:(NTU)
Turbidity of Gro Turbidity meter Pre-filtered Tur Sample ID:	oundwater r: rbidity: //ພ zo D/	る。30 Sample	(dispensed fr	Serial #:(NTU)
Turbidity of Gro Turbidity meter Pre-filtered Tur Sample ID:	oundwater bidity: Au zo D/ tions:	Sample	(dispensed fr (NTU) Replica	Serial #:



Site:	Cytec navie	de Grace				
Location:	Havre de Gra	ce, Maryland				
Well ID:	WW-93					
Wall Tomas	□Monitoring	[]Othor:				
Well Type:	_					
Well Finish:	☐Stick Up	Flush Mount	□ Oth /if i	١.		
Measuring Pt:	Top of Casi	_	☐Other (specify			
Total Depth As Co	-			-		
Well Casing:	Diameter:	_2_	Material:	PUC		
Well Screen:	Diameter:					
Deployment						
Date and Time of	Deployment:	Date:	01/13/2	Time:	1355	
Weather Conditio	ns:	clear				
Depth to groundw	vater at time of	deployment:	35 75			
Total well depth a			49.45			
	•	-	11113			
Dimensions of Hy	draSleeve™:	Length (in.)		Diameter (in.)		
Deployment Meth	od/Position of	Weight:	□Bottom Ancho HydraSleeve™.	_		
			☐Bottom Ancho	r: Weight attach	ed to bottom of Hyd	IraSleeve™
			Weight suspende	•		
			•	-	top and bottom of ests on well bottom	
Deployment Depti	h (Top of Hydra	aSleeve™) (ft bī	OC):			
B-4-favori						
Retrieval	D. A. J Iv	D-1	9/15/	2 . Time	0022	
Date and Time of		Date:	-(/15/	Zı Time:	0830	
Total # of days de		-	-			
Weather Condition		clear	M Onethnoon F)		
Retrieval Method:			Continuous P			
			☐ Short Strokes		35/01	
Depth to groundw				eval):	35.60	
Total well depth a			fter retrieval):		49.87	
Downhole Field P	<u>-</u>					
Temp (°C) OR	P(mV) pH	DO (mg/L)	Cond (mS/cm)	Water quality n	neter:YSI	356
15.26 13	2.776	650 650	0.337	Serial #:		
Turbidity of Grou	ndwater Samp		om HydraSleeve	TM):		
Turbidity meter:			Serial #: _			
Pre-filtered Turbi	dity:	(NTU)	Post-filtered Tu	rbidity:	(NTU)	
Sample ID: See	below	Replica	te ID:		_ Sample Time: _	0830
Notes/Observatio						
2 denth	Samples	MO	123 (09	1521) 40	083	o)
	Joseph C J		023/09			
			00000	- /	-, (0	
Field Sampling Te	echnician: Nai		•	Arcadis		



Site:	Cytec Havre	de Grace				
Location:		ace, Maryland				
Well ID:	WML	227				
Well Type:	□Monitoring	□Other:				
Well Finish:	☐Stick Up	Flush Mount				
Measuring Pt:	☑₹op of Cas	ing	☐Other (specify):			
Total Depth As Co	nstructed (ft b	TOC):	_Screened Interval (f	t bTOC):		
Well Casing:	Diameter:	_ 2	Material:	proc		
Well Screen:	Diameter:		<u> </u>			
Deployment					_ <u> </u>	
Date and Time of I	Deployment:	Date:	4/13/21	Time:	1219	
Weather Condition	ıs:	clear				
Depth to groundwa			11.33			
Total well depth at	time of deplo	oyment:	36,50			
Dimensions of Hyd	iraSleeve™:	Length (in.)	D	iameter (in.) _		
Deployment Metho	d/Position of	Weight:	□Bottom Anchor: W HydraSleeve™. Wei □Bottom Anchor: W Weight suspended in	ght rests on w eight attached		eve™
Deployment Depth	(Top of Hydr	aSleeve™) (ft b	□Top-Down: Weigh HydraSleeve™. Bott FOC):	om weight res	its on well bottom.	
}						
Retrieval						
Retrieval Date and Time of F	Retrieval:	Date:	9/14/21	Time:	1255	
		1	9/14/21	Time:	1255	
Date and Time of F Total # of days dep Weather Condition	oloyed:	Date:			1255	
Date and Time of F Total # of days dep	oloyed:	1			1255	
Date and Time of F Total # of days den Weather Condition Retrieval Method:	oloyed: s:	clear	Continuous Pull (Short Strokes	preferred)	1255	
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa	oloyed: is: ater at time of	f retrieval (meas		(preferred)	11,26	
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at	oloyed: as: ater at time of time of retrie	f retrieval (meas		preferred)	11,26	
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	oloyed: us: uster at time of time of retrie urameters Upo	f retrieval (measoval (measured a	E Continuous Pull (☐ Short Strokes ured before retrieval) ifter retrieval):	(preferred)	11,26	
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	ater at time of time of retries arameters Upon	f retrieval (measoval (measured an Retrieval:	Continuous Pull (Short Strokes ured before retrieval) ifter retrieval): Cond (mS/cm)	(preferred)): 	11,26 178 eter: YSI 55	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF	ater at time of time of retrie	f retrieval (measeval (measured and Retrieval:	Cond (mS/cm)	preferred)):	11,26	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF	ater at time of time of retrie	f retrieval (measeval (measured and Retrieval:	Continuous Pull (Short Strokes ured before retrieval) ifter retrieval): Cond (mS/cm)	preferred)):	11,26 178 eter: YSI 55	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF	ater at time of time of retrie trameters Upo (mV) phondwater Samp	f retrieval (measeval (measured and por Retrieval:	Cond (mS/cm) Cond (mS/cm) Com HydraSleeveTM):	preferred)):	//, 26 158 eter:	6
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbic	ater at time of time of retries arameters Upon (mV) phondwater Samplity:	f retrieval (measeval (measured an Retrieval: DO (mg/L) Dole (dispensed in (NTU)	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbic	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	-
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid	ater at time of time of retries arameters Upon (mV) phondwater Samplity:	f retrieval (measeval (measured and por Retrieval:	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbic	(preferred) :	//, 26 158 eter:	-
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbic	ater at time of time of retries arameters Upon (mV) phase of the same of time of retries arameters upon (mV) phase of time of	f retrieval (measeval (measured an Retrieval: DO (mg/L) Dole (dispensed in (NTU)	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Wa Cond (mS/cm) Serom HydraSleeveTM): Serial #: Post-filtered Turbic	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	-
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of time of retries arameters Upon (mV) phase of the same of time of retries arameters upon (mV) phase of time of	f retrieval (measeval (measured an Retrieval: DO (mg/L) Dole (dispensed in (NTU)	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Wa Cond (mS/cm) Serom HydraSleeveTM): Serial #: Post-filtered Turbic	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	-
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of time of retries arameters Upon (mV) phase of the same of time of retries arameters upon (mV) phase of time of	f retrieval (measeval (measured an Retrieval: DO (mg/L) Dole (dispensed in (NTU)	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Wa Cond (mS/cm) Serom HydraSleeveTM): Serial #: Post-filtered Turbic	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	5
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of time of retries arameters Upon (mV) phase of the same of time of retries arameters upon (mV) phase of time of	f retrieval (measeval (measured an Retrieval: DO (mg/L) Dole (dispensed in (NTU)	Continuous Pull (Short Strokes ured before retrieval): Cond (mS/cm) Wa Cond (mS/cm) Serom HydraSleeveTM): Serial #: Post-filtered Turbic	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	-
Date and Time of F Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORF Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	ater at time of time of retries arameters Upo (mV) photogram (mV)	f retrieval (measeval (measured as pon Retrieval: DO (mg/L) Dole (dispensed from (NTU) Replica	Continuous Puil (Short Strokes ured before retrieval): Cond (mS/cm) Cond (mS/cm) Serial #: Post-filtered Turbic ute ID:	(preferred) :	#, 26 18 eter: \(\sum \) \(\sum	-



Site:	Cylec navie	de Grace	
Location:	Havre de Gra	ice, Maryland	
Well ID:	MW-2	51	
Well Type:	☐Monitoring	□Other:	
Well Finish:	□Stick Up	☑Flush Mount	13
Measuring Pt:	™Top of Cas		□Other (specify):
-	-	-	Screened Interval (ft bTOC):
Well Casing:		2	Material: PUC
Well Screen:	Diameter:		
Deployment			_
Date and Time of I	lonlovment:	, Date:	e: 9/13/21 Time: \\00
Weather Condition		dear	7/15/21
Depth to groundwa			14.85
Total well depth at			29.41
·			
Dimensions of Hyd	IraSleeve™:	Length (in.)	Diameter (in.)
Deployment Metho	d/Position of	Weight:	Bottom Anchor: Weight attached to bottom of HydraSleeve™. Weight rests on well bottom. □Bottom Anchor: Weight attached to bottom of HydraSleeve Weight suspended in well.
			☐Top-Down: Weight attached to top and bottom of
			HydraSleeve™. Bottom weight rests on well bottom.
Deployment Depth	(Top of Hydra	aSieeve™) (ft bī	PTOC):
Retrieval			
Date and Time of R	etrieval:	Date:	e: 9/14/21 Time: 11/0
Total # of days dep	loyed:		
Weather Condition	s:	clean	Y .
Retrieval Method:			Continuous Pull (preferred)
			☐ Short Strokes
Depth to groundwa	iter at time of	retrieval (measi	sured before retrieval):
Total well depth at	time of retriev	val (measured a	after retrieval): 29.24
Downhole Field Pa			
Temp (°C) ORP	(mV) pH	DO (mg/L)	Cond (mS/cm) Water quality meter: YSI 566
	436		
		le (dispensed fr	from HydraSleeve TM):
Turbidity of Groun	dwater Samp	10 (mioboilee ii	
			•
Turbidity meter: _			Serial #:
Turbidity meter: Pre-filtered Turbid	ity:	(NTU)	Serial #:(NTU)
Turbidity meter: _ Pre-filtered Turbid Sample ID:	ity:	(NTU)	Serial #:(NTU)
Turbidity meter: Pre-filtered Turbid	ity:	(NTU)	Serial #:(NTU)
Turbidity meter: _ Pre-filtered Turbid Sample ID:	ity:	(NTU)	Serial #:(NTU)
Turbidity meter: _ Pre-filtered Turbid Sample ID:	ity:	(NTU)	Serial #: (NTU)
Turbidity meter: _ Pre-filtered Turbid Sample ID:	ity:	(NTU)	Serial #: (NTU)
Turbidity meter: _ Pre-filtered Turbid Sample ID:	ity:	(NTU) <u>(14≥ı</u>) Replica	Post-filtered Turbidity:(NTU) ate ID: Sample Time:// O



Site:	Cytec	Havre de	Grace						
Location:	Havre	de Grace	, Maryland						
Well ID:	WM	- 27	•						
Well Type:	□Moni	itoring [Other:						
Well Finish:	□Stick	Up ∠	Flush Mount						
Measuring P	t: Top	of Casing		☐Other (specify):			3	
Total Depth	As Construct	ed (ft bTO	OC):	_Screened Interv					
Well Casing:	Dia	meter:	2	Material: _	P	10			
Well Screen:	Dia	meter:		-					
Deployment									
Date and Tim	ne of Deploym	nent:	Pate:		21	Time:	144	5	
Weather Con	iditions:		clen						
Depth to gro	undwater at t	ime of de	eployment:	11.34					
Total well de	pth at time of	deploym	nent:	34.17					
Dimensions (of HydraSleev	ve™: Le	ength (in.)		Diamet	er (in.)			
Deployment i	Method/Posit	ion of We	eight:	☐Bottom Ancho	r: Weight	attached	to bottor	n of	
				HydraSleeve™.	Weight re	sts on we	II bottom		
				☐Bottom Ancho	r: Weight	attached	to botton	n of Hyd	IraSleeve™
				Weight suspend	ed in well.				
				□Top-Down: W	•		•		
				HydraSleeve™.	Bottom we	eight rest	on well	bottom	
Deployment I	Depth (Top of	f HydraS	leeve™) (ft b1	roc):					
				-1.					
Date and Tim	e of Retrieva	l:	Date:	9/15/	Z (Time:	10	15	
Date and Tim Total # of day	/s deployed:	l: 	2	9/15/	21	Time:	10	15	
Date and Tim Total # of day Weather Con	/s deployed: ditions:	l: 	_	<u> </u>			10	115	
Date and Tim Total # of day Weather Con	/s deployed: ditions:	l: 	2	I Continuous F	Pull (prefer		10	15	
Date and Tim Total # of day Weather Con Retrieval Met	/s deployed: ditions: hod:	_	clear	☐ Continuous F☐ Short Stroke:	Pull (prefei	red)		15	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou	s deployed: ditions: hod: undwater at ti	ime of re	2 c cur trieval (measu	☐ Continuous F☐ Short Stroke:	Pull (prefei	red)	40)15	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well de	ys deployed: ditions: hod: undwater at ti pth at time of	ime of re	c Cox trieval (measured at	☐ Continuous F☐ Short Stroke:	Pull (prefei	red)		015	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well de Downhole Fie	ys deployed: ditions: hod: undwater at ti pth at time of eld Paramete	me of re retrieval	trieval (measured a	E Continuous F ☐ Short Stroke: ured before retric fter retrieval):	Pull (prefer s eval):	red) (/.	40		55/
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well de Downhole Fie Temp (°C)	ys deployed: ditions: hod: undwater at ti pth at time of	ime of re retrieval rs Upon I pH	trieval (measured a Retrieval:	☐ Continuous F☐ Short Stroke: ured before retricter retrieval): Cond (mS/cm)	Pull (prefers s eval):	(/, 33 - 4	・40 t3 er:	YSI	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie	ys deployed: ditions: hod: undwater at ti pth at time of eld Parameter ORP(mV)	ime of refretrieval	trieval (measured a Retrieval:	□ Short Stroke: ured before retric fter retrieval): Cond (mS/cm)	Pull (preferes eval): Water qu Serial #:	red) (/.	・40 t3 er:	YSI	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie	ys deployed: ditions: hod: undwater at ti pth at time of eld Parameter ORP(mV)	ime of refretrieval	trieval (measured a Retrieval:	☐ Continuous F☐ Short Stroke: ured before retricter retrieval): Cond (mS/cm)	Pull (preferes eval): Water qu Serial #:	(/, 33 - 4	・40 t3 er:	YSI	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie	ys deployed: ditions: hod: undwater at ti pth at time of eld Parameter ORP(mV)	ime of refretrieval	trieval (measured a Retrieval:	□ Short Stroke: ured before retric fter retrieval): Cond (mS/cm)	Pull (preferes eval): Water qu Serial #:	(/, 33 - 4	. 40 t 3 er:	YsI	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) \\2 0 5 Turbidity of 6 Turbidity me Pre-filtered 1	ys deployed: ditions: hod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter:	me of recretrieval rs Upon I pH	trieval (measured a Retrieval:	© Cond (mS/cm) Cond (mS/cm) Com HydraSleeve	Pull (preferes eval): Water qu Serial #:	red) (// 33 - 4	. 40 t 3 er:	YsI	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) \\2 0 5 Turbidity of 6 Turbidity me Pre-filtered 1	ys deployed: ditions: hod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater	me of recretrieval rs Upon I pH	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	□ Short Stroke: ured before retricter retrieval): □ Cond (mS/cm) □ O U (point of the cond (mS/cm) □ O U (point of the cond (mS/cm) □ O U (point of the cond (mS/cm)	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	. 40 t 3 er:	<i>Y</i> 5 <u>∫</u>	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) \\2 \ 0 \ 5 Turbidity of 6 Turbidity me Pre-filtered 1	ditions: chod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter: urbidity: Mw 27 (6)	me of recretrieval rs Upon I pH	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	Cond (mS/cm) Com HydraSleeve Serial #:	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	・ く ろ そろ er:(NT	<i>Y</i> 5 <u>∫</u>	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) Turbidity of 6 Turbidity me Pre-filtered 1 Sample ID:	ditions: chod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter: urbidity: Mw 27 (6)	me of recretrieval rs Upon I pH	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	Cond (mS/cm) Com HydraSleeve Serial #:	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	・ く ろ そろ er:(NT	<i>Y</i> 5 <u>∫</u>	
Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) Turbidity of the Turbidity me Pre-filtered 1 Sample ID:	ditions: chod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter: urbidity: Mw 27 (6)	me of recretrieval rs Upon I pH	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	Cond (mS/cm) Com HydraSleeve Serial #:	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	・ く ろ そろ er:(NT	<i>Y</i> 5 <u>∫</u>	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) Turbidity of 6 Turbidity me Pre-filtered 1 Sample ID:	ditions: chod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter: urbidity: Mw 27 (6)	me of recretrieval rs Upon I pH	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	Cond (mS/cm) Com HydraSleeve Serial #:	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	・ く の も 3 er:(NT	<i>Y</i> 5 <u>∫</u>	
Date and Tim Total # of day Weather Con Retrieval Met Depth to grou Total well dep Downhole Fie Temp (°C) Turbidity of 6 Turbidity me Pre-filtered T Sample ID: Notes/Observ	ditions: chod: undwater at ti pth at time of eld Parameter ORP(mV) Groundwater eter: urbidity: Mw 27 (6) vations:	ime of reference of retrieval results upon I pH S 7/0 Sample	trieval (measured a Retrieval: DO (mg/L) Glispensed fr	Short Stroke: ured before retricter retrieval): Cond (mS/cm) O	Pull (preferes eval): Water qu Serial #:	(/, 33 - ⁴	・ く の も 3 er:(NT	<i>Y</i> 5 <u>∫</u>	



Site:	Cytec Havre de	Grace			
Location:	Havre de Grace,	Maryland			
Well ID:	MM - 96	D			
Well Type:	☐Monitoring ☐	Other:			
Well Finish:	☐Stick Up 🗷	Flush Mount			
Measuring Pt:	Ø Top of Casing		□Other (specify):_		
Total Depth As Co	nstructed (ft bTO	C):	Screened Interval	(ft bTOC):	
Well Casing:	Diameter:			RUC	
Well Screen:	Diameter:		· ·		
Deployment			-		
Date and Time of D	eployment:	Date:	9/13/21	Time:	1044
Weather Condition	s:	clear			
Depth to groundwa	ater at time of de		16.03		
Total well depth at	time of deploym	ent:	41.56		
Dimensions of Hyd	IraSleeve™: le	nath (in)		Diameter (in.)	
-					
Deployment Metho	d/Position of We	eight:	Bottom Anchor: \	_	
			HydraSleeve™. We	•	170.00
			Weight suspended	•	to bottom of HydraSleeve™
					a and buttoned
			☐Top-Down: Weig HydraSleeve™. Bo		
D 1 4 D 4h	(Tara of the due Of	TW\ /64 ls.7	-	_	
Deployment Depth	(1 op of nydrasi	eeve ····) (π b	roc):		
Retrieval			7 7		
Retrieval Date and Time of R	tetrieval:	Date:	9/14/21	Time:	1030
		Date:	9/14/21	Time:	1030
Date and Time of R	loyed:		9/14/21	Time:	1030
Date and Time of R Total # of days dep	loyed:				1030
Date and Time of R Total # of days dep Weather Condition	loyed:		en		1030
Date and Time of R Total # of days dep Weather Condition Retrieval Method:	loyed: s:	c/e	Continuous Pull	I (preferred)	
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa	oloyed: s: ater at time of ret	C /c	Continuous Pull Short Strokes	I (preferred)	
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	oloyed: s: ater at time of ret time of retrieval rameters Upon F	crieval (measi (measured a Retrieval:	Continuous Pull Short Strokes ured before retrieva	I (preferred) al): /5,7	76
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	oloyed: s: ater at time of ret time of retrieval rameters Upon F	crieval (measi (measured a Retrieval:	Continuous Pull Short Strokes ured before retrieva	I (preferred) al): /5,7	76
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa	ater at time of ret time of retrieval rameters Upon F	crieval (measi (measured a Retrieval:	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm)	I (preferred) al): /5,7	96 er:/ST_586
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP	iter at time of ret time of retrieval rameters Upon F (mV) pH	rieval (measi (measured a Retrieval:	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm)	I (preferred) al): /5, 41, 4 L ater quality met	96 er:/ST_586
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP	ter at time of ret time of retrieval rameters Upon F (mV) pH	rieval (measi (measured a Retrieval:	Continuous Pull Short Strokes ured before retrieva ifter retrieval): Cond (mS/cm) (). 200 s rom HydraSleeve TM	I (preferred) al): /5/ 41, 44 ater quality met berial #:	76 er:/SŢ 5€6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter:	s: ater at time of ret time of retrieval rameters Upon F (mV) pH 5、レーラスを	rieval (measured a Retrieval: DO (mg/L) 3.59 (dispensed fr	Continuous Pull Short Strokes ured before retrieva (fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #:	I (preferred) al): /5/ 41, 44 ater quality met berial #:	76 er: <u>/SJ</u> 556
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid	iter at time of ret time of retrieval rameters Upon F (mV) pH 5,1 5,36 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #: Post-filtered Turb	I (preferred) al):	76 er:/ST_5{6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.4 5.35 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva (fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #:	I (preferred) al):	₹6 er: <u>/S</u> Ţ \$ ₹6 (NTU)
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.4 5.35 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #: Post-filtered Turb	I (preferred) al):	76 er:/ST_5{6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.4 5.35 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #: Post-filtered Turb	I (preferred) al):	76 er:/ST_5{6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.4 5.35 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #: Post-filtered Turb	I (preferred) al):	76 er:/ST_5{6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.4 5.35 dwater Sample (crieval (measi (measured a Retrieval: DO (mg/L)	Continuous Pull Short Strokes ured before retrieva fter retrieval): Cond (mS/cm) Som HydraSleeve Serial #: Post-filtered Turb	I (preferred) al):	76 er:/ST_5{6
Date and Time of R Total # of days dep Weather Condition Retrieval Method: Depth to groundwa Total well depth at Downhole Field Pa Temp (°C) ORP Turbidity of Groun Turbidity meter: Pre-filtered Turbid Sample ID:	iter at time of ret time of retrieval rameters Upon F (mV) pH 5.21 5.35 idwater Sample (ity:	rieval (measured a Retrieval: DO (mg/L) 3.59 (dispensed from Replica)	Continuous Pull Short Strokes ured before retrieva fiter retrieval): Cond (mS/cm) Sorom HydraSleeve Serial #: Post-filtered Turbiate ID:	I (preferred) al): // // // // /ater quality met Serial #:	76 er:/ST_5{6

301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record



Environment Testing America

Client Information	Sampler: Andy	Feild	Lab PM Colus	M: ssy, Jill	L				Carrie	Tracking I	No(s):		COC No: 180-72814-14117	.1
Client Contact: Ms. Shwetha Sridharan	Phone: 443 55°		E-Mail: Jill.Co		@Eurof	inset.c	om		State	of Origin:	12.1		Page: Page 1 of 5	
Company: ARCADIS U.S., Inc.		PWSID:		,,,,	<u></u>			alysis R			ura		Job#:	
Address: 7550 Teague Road Suite 210	Due Date Requested:	Standa	-1			T		alysis it	eques	leu		100	Preservation Code	s:
City:	TAT Requested (days):	- (260		2020					W.L		M - Hexane N - None
Hanover State, Zip:	/	Vorreal			25		503							O - AsNaO2 P - Na2O4S
MD, 21076 Phone:	Compliance Project: PO #:	Yes A No				$\frac{1}{2}$	الح						E - NaHSO4	Q - Na2SO3 R - Na2S2O3
302-897-8993(Tel)	30005455.0002.			9	1/00		10,						G - Amchlor	S - H2SO4 T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO #:		Matrix (Wewater, 8=solid, O=wastefoli, BT=Tissus, A=Air)	S Or N	30	رة الأ							l - ice	U - Acetone V - MCAA
Project Name: Cytec Havre de Grace MD	Project #: 18017987			S or h	Š	ã	0	2				alnor		W - pH 4-5 Z - other (specify)
Site: Cytec	SSOW#:			mple (Ye	Ciff	ZIV	3			-		Total Number of containers	Other:	
CYTEC				Mist	8	4	0					er of		
		Sample	Matrix (w=water,	Field Filtered Sample Perform MS/MSD (Ye		1/2	10	0				quin		
O-mails 14 mars - are		mple (C=comp,	S=solid, O=waste/oil,	ertor e	Site	1/0	0					stal N		
Sample Identification	Sample Date Ti	me G=grab) Preserva	BT=Tissue, A=Air)	XX	ONE STATE	8 405	(JEE)	RS 688 A	BE 300	6604 ICE)	Esta gray a	×	Special Ins	tructions/Note:
MW4(091421)	9/14/21/11	30 G	w		3	100								
M4) 85 (09 14 21)		20 1	1		3									
MW125(091421)		45			3							100		
MV GI (0918/21)		40			3				11					
MW120 (0914 21)		30025		9	Ø A	-			\neg				M5/	450
MW13D(09 14 21)		10			3							100		
MW14I (091521)	2/15/21 0	750			31	1	1	2				魏		
MW16 (09 14 21)	9/14/21 13	50			3	1 1	(Z				7/4		
MY25I (09 1421)		10			3									
MW27 (0915 21)	9/15/21/10	15	1		3,4	11	1:	2						
MW28P (09 1421)	2/14/21/10	30 G	W	1										
Possible Hazard Identification	[7K].			Sar				ee may be	e assess	sed if sa	mples are	_	ed longer than 1 i	month)
Non-Hazard Flammable Skin Irritant Poise Deliverable Requested: I, II, III, IV, Other (specify)	on B Unknown	Radiologica		Spe		ım To		Requiren	Dispos	al By La	b	Arch	nive For	Months
Empty Kit Relinquished by	Date	1	T-	Time:						Method of	Shipment:			
1) \ \	Date/Time: / /		Company		Receive	d by:					Date/Time:			Company
Relinquished by:	Date/Time:	1 /300	Company	44	Receive	d by:					Date/Time:			Company
Relinquished by:	Date/Time;													
	Date Hille,		Company		Receive	a by:					Date/Time:			Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No					Cooler T	empera	ure(s) °	C and Other	Remarks:					

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

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Environment Testing America

Phone: 412-963-7058 Fax: 412-963-2468																America
Client Information		dy Fe	ild		ssy, Ji	ll L				C	arrier Track	ing No(s):			COC No: 180-72814-14117	7.1
Client Contact: Ms. Shwetha Sridharan	Phone: 443	354	0186	E-Mail Jill.C		r@Euro	finset	.com		S	tate of Origi	yla	-6		Page: Page 2 of 5	
Company: ARCADIS U.S., Inc.			PWSID:					Α	nalys	is Requ	,				Job #:	
Address: 7550 Teague Road Suite 210	Due Date Requeste	ed: St	landas	-1		99		623						200	Preservation Code	es:
City: Hanover	TAT Requested (da	iys):		1		856	0	$ _{\mathcal{A}}$							A - HCL B - NaOH	M - Hexane N - None
State, Zip: MD, 21076	Compliance Project	t: A Yes A	No			2	5		1						C - Zn Acetate D - Nitric Acid E - NaHSO4	O - AsNaO2 P - Na2O4S Q - Na2SO3
Phone: 302-897-8993(Tel)	PO#: 30005455.0002					Z	$\zeta \zeta$		0					權的	F - MeOH G - Amchlor	R - Na2S2O3 S - H2SO4
Email: shwetha.sridharan@arcadis.com	WO #:				or No)	1-7	50	4	0					篮	H - Ascorbic Acid I - Ice	T - TSP Dodecahydrate U - Acetone
Project Name:	Project #:				TALK STATES	4	15	9 7	90			1.1		1978	J - DI Water K - EDTA	V - MCAA W - pH 4-5
Cytec Havre de Grace MD Site:	18017987 SSOW#:				Sample (Yes	Ü	- N	1-5						월	L - EDA Other:	Z - other (specify)
Cytec						1	3	R 2						ofc	Oulei.	
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	(W=water, S=solid, O≐waste/oil,	Fleid Filtered Perform MS/A	site	SUF 1	000	7					Total Number of	Special Ins	structions/Note:
	> <	><		tion Code:	XX		W RO	5 4 1		02 7 1			800 year	X	The same	THE STATE OF
MW3(091421)	9/14/21	1145	G	W		3	1	1	2							
MW80(091421).	7/14/21	1310		1		3								8.15		
MW 14 (091521)	9/15/21	0800				3										
MW 18 (0915 21) 24	9/15/21	0950	1			3	1 1	7	Z					110		
MW 20P1 (0915 21)	4/15/21	0910				3	1 1	1	Z							
MW 220 (091421)	9/18/21	1255				3										
MW 23 (0915 Z1) 40	9/15/21	0830				3	1 1	1	2					AC.		
DUPOI (09 14 21)	9/14/21	1200				3										
PUPOZ (09 14 21)	9/14/21	1300	G	W		3	1	1	2					u.		
Trip Blank			_	_		3								7.5		
MU 23 (091521) 47	9/15/21	0840	6	W		3	11	1	2							
Possible Hazard Identification Non-Hazard Flammable Skin Irritant Pois	on B				Sa					ay be as:	sessed if	sample			d longer than 1	month)
Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unkn	own - F	Radiologica		Spi			Clien		Dis uirements	posal By	Lab	A.	rchi	ve For	Months
Empty Kit Relinquished by:		Date:			Time:		_					of Shipme	ent:	_		
Relinquished by:	Date/Time:	,	7.	Company		Receive	ed by:					Date/T		_		Company
Relinquished by:	9//5/2 Date/Time:	21 1	300	Company	15	Receive	ed by:					Date/T	îme:	_		Company
Relinquished by:	Date/Time:			Company		Receive	ed by:					Date/T	Time:	_		Company
Custody Seals Intact: Custody Seal No.:						Cooler	Tomocr	atura(a)	OC and	Other Rema	arker.					
Δ Yes Δ No						GOOIEF	amper	ature(S)	cano	Other Rema	uKS:					

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

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Environment Testing
America

Phone: 412-963-7058 Fax: 412-963-2468																		America	
Client Information Client Contact:	Sampler: A	rdy 1	Feile	/ Lat	olussy,	Jill L					- 1		Tracking				COC No: 180-72814-1411	7.1	
Ms. Shwetha Sridharan Company:	Phone: 44	3/350	4 018	76 Jil	Mail: II.Colus:	sy@E	Eurofin	set.co	om			State of	Origin:	ula	wo		Page: Page 3 of 5		
ARCADIS U.S., Inc. Address:									Ana	alysis	s Req	ueste	ed /				Job#:		
75550 Teague Road Suite 210 City: Hanover	Due Date Request		standa	50		67/6	200		20							5	Preservation Cod A - HCL B - NaOH	les: M - Hexane N - None	
State, Zip: MD, 21076 Phone:	Compliance Proje			<i>^</i>	- Acceptance			ŭ	662								C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH	O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3	
302-897-8993(TeI) Email:	30005455.0002 Wo#:	2.			No)	Work.	0 0	90	19	9							G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahyo U - Acetone	drate
shwetha.sridharan@arcadis.com Project Name: Cytec Havre de Grace MD	Project #: 18017987				(Yes or	t or No	300	10.		90						aluere	J - DI Water K - EDTA L - EDA	V - MCAA W - pH 4-5 Z - other (specify)	
Cytec Havre de Grace MD Site: Cytec	SSOW#:				Sample	SD(Yes	Set T	I	00							뒽	Other:		
Sample Identification	Sample Date	Sample Time		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=A	Field Filte	Perform MS/M	Sulta	Total	D. 550	700						Total Number of	Special In	structions/Note	e:
11/11/2/2015	7-7	\sim		ation Code:	X	Χ.	4 2		8815							\times	Mann .		
MW18 (071521)31	2/15/21	0940	G	6)	+	3	1	/	1	Z			+	\perp					
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Possible Hazard Identification					Щ											1/2			
	son B Unkn	iown 🗀 [Radiologica	ıl		L/	Return	To C	lient		Di	isposal	i d if sa il By La	amples ab	3 1		ed longer than 1 i	month) Months	
Empty Kit Relinquished by:		Date:					Insuu	JCtion:	S/QC	Kequii	irement	ts:							
Relinquished by:	Date/Time:	Date.		Company	Time	Rec	eived by	v·			_	Me	athod or	Shipment Date/Tim				To	
Relinquished by:	Date/Time:	21/2	ठेक इ	Company	·M	ı	eived by							Date/Tim				Company	
Relinquished by:	Date/Time:			Company			eived by							Date/Tim				Company	
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No									re(s) °C	C and Ot	ther Rem	narks:		Date/11/				Company	
A res A No																			

Pace Analytical*	CHAIN-OF-CUSTODY Analytical Request Document ical* Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields										LAB USE	ONLY- A	ffix Wo	ix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here						
Company:	Chain-	of-Custody	is a LEGAL Billing Info		IT - Complet	e all releve	ent fields		1					3						
Alreadis	- 26		"									ALL	SHA	DED	AREA	AS are	for L	AB USE ONLY		
Address: 7550 En	aveRo	1.							4		Contain	er Preser	vative 1	Гуре *	k I		Lab Proje	ect Manager:		
Report To: fina (11 mst	2		Email To:						** Pi	reservati	ve Types: (1) nitric ac	id, (2) su	ılfuric a	cid, (3) hy	/drochlori	c acid, (4)	sodium hydroxide, (5) zinc ace	etate,	
			Site Colleg	tion Info/	Address:	61			(6) m (C) a	nethanol, mmoniu	, (7) sodium m hydroxid	n bisulfate e. (D) TSP.	(8) sodi (U) Unn	ium thic	osulfate, (ed. (O) Ot	(9) hexane	e, (A) asco	rbic acid, (B) ammonium sulfat	e,	
Customer Project Name/Number:	dhalo	W	State:	County/C		ne Zone Co	llactode					Analy			, (0, 00		Lab Profi	le/Line:		
2007589	2.02				6 Brace									11				ample Receipt Checkli		
Phone:	Site/Facility ID) #:	-		Compliand	e Monitor	ing?		4		50				ľ		Custo	dy Seals Present/Inta dy Signatures Present	act Y N NA : Y N NA	
Email:		()	1700		[◄ Yes	[] No			900				£	1			Colle	ctor Signature Preser es Intact		
Collected By (print):	Purchase Ord Quote #:	er #:			DW PWS I				4								Corre	ct Bottles cient Volume	Y N NA Y N NA	
Collected By (signature):	Turnaround D	ate Requir							V			_==					Sampl	es Received on Ice	Y N NA	
and ax		Fans	[*] Yes [] No						0								USDA	Headspace Acceptable Regulated Soils	Y N NA	
Sample Disposal:	Rush:	ma Dec	[]N- : ~		Field Filter				8					10			Resid	es in Holding Time ual Chlorine Present	Y N NA Y N NA	
[] Dispose as appropriate [] Return [] Archive:	[] 2 Day		[] Next Day		[] Yes	[²⁴] No	1		2									e pH Acceptable	Y N NA	
[] Hold:	(1	Expedite Cha	rges Apply)		Analysis:									5			pH St Sulfi	rips:de Present	Y N NA	
* Matrix Codes (Insert in Matrix bo Product (P), Soil/Solid (SL), Oil (O	x below): Drink L), Wipe (WP),	ding Water Air (AR), Ti	(DW), Grou ssue (TS), B	ind Water ioassay (B)	(GW), Wast), Vapor (V),	ewater (W Other (OT	'W), ')		Pt 4						10			Acetate Strips:		
Customer Sample ID	Matrix *	Comp / Grab	Compos	ted (or site Start)	Composite End Res # of												Lab S	ample # / Comments:		
mw3/091421	GW	G	Date	Time	Date	Time	-	+-	2	H			-	+	-					
11/1 1/2/2018/20	BW	G	Michael	1350			-	77	3		- 10		-			+ 1				
DUCO 2/02/92/	G 41	G	9/11/2	1320			1	1 3	3	\vdash	10		+	-	-	+	1			
Mas 14 / 103157 A	Gu	G	2/10/21	0750				3	7		+		-		-	+ +				
111372 10915274	5650	6	7/15/5	0730	,		1	12	A			+	-	-	-	+ +				
190172/091073117	64	G	CH3/21	10016	,	, and	1	1 =	3						-	+				
19127 (091571)	(411	6	11/5/7	1015			†	7	8						,					
11/1/2001/091521)	6.21	(ma	= /2	000				3	2									T		
1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	(10)	74	4 1 8/6	M30				1	3		20	1								
14817/18/157113/		16	775/74	(1940					3											
Customer Remarks / Special Condit	ions / Possible	Hazards:	Type of Ic	e Used:	Wet E	Blue Di	ry N	one) film	SHOR	T HOLDS	PRESENT	(<72 hc	ours):	Y N	N/A		Lab Sample Temperature	Info:	
Trip Blank :	3×		Packing M	laterial Use	ed:	20					racking #:				534			Temp Blank Received Therm ID#:	Y N NA	
			Radchem	sample(s)	screened (<	500 cpm\.	y i	NA.			es receive		12					Cooler 1 Temp Upon I Cooler 1 Therm Corr.		
Radchem sample(s) screened (<500 cpm): Y N Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature)						_		-			lient	Cou		Pace Cou		Cooler 1 Corrected Te				
Plinquished by/Company: (Signature) Pate/Time: Pate/Time: Received by/Company: (Signature)						iure)		l _D	ate/Time:		-	Table i	_	B USE ON	NLY	Comments:				
Relinquished by/Company: (Signatu			<u> </u>			./C	/ct			4	. /			Acctnu			-			
	uished by/Company. (Signature) Date/Time: Received by/Company: (Signature)						D	ate/Time:			Templa Prelogi	ite:			Trip Blank Received: HCL MeOH TSI					
Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature)				ure) Date/Time: PM: Non Conformance(s): Page					Page:											

CHAIN-OF-CUSTODY Analytical Request Documen Pace Analytical* Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields									1		LAB USE	ONLY-	Affix	Workor			l Here or List umber Here	Pace Workorder Number or
Arcadis			Billing Inform		•							AL	L SH	ADE	ARE	AS a	re for LAE	B USE ONLY
dress: 7556 Te	nave	64							0	_	Contain	er Presi	ervativ	е Туре	**		Lab Project	Manager:
port To: Tina Arm	strong	3	Email To:						** Pres	ervativ	e Types (1) nitric	acid, (2)	sulfuric	acid, (3) I	nydroch	loric acid, (4) so	dium hydroxide, (5) zinc acetate,
py To: Shwetha.	Sridhar	an	Site Collecti	on Info/A	ddress:	tion 4	Street	+	(C) ami	noniun	hydroxic		SP, (U) L	Inpreser	ved, (O) C	ther		c acid, (B) ammonium sulfate,
stomer Project Name/Number:			State: (ounty/Cit	y: Tim	ne Zone Co	llected:					Aria	lyses					ple Receipt Checklist:
one:	Site/Facility ID		tec		Complianc				S								Custody	Seals Present/Intact Y N NA Signatures Present Y N NA or Signature Present Y N NA
llected By (print): Kyle Berstein	Purchase Orde Quote #:				DW PWS II				carbon								Correct Suffici	Intact Y N NA Bottles Y N NA ent Volume Y N NA
llected by (signature):	Turnaround Da	ate Requir	ed:		Immediate Yes	ly Packed o	on Ice:		25a								VOA - H USDA Re	Received on Ice Y N NA eadspace Acceptable Y N NA gulated Soils Y N NA in Holding Time Y N NA
mple Disposal: Dispose as appropriate [Rush: [] Sar [] 2 Day [me Day	[] Next Day) 5 Day	Field Filter [] Yes Analysis: _				Hydro								Residua Cl Stri Sample pH Stri	1 Chlorine Present Y N NA ps:
Matrix Codes (Insert in Matrix bo Product (P), Soil/Solid (SL), Oil (O									世	-								etate Strips:
Customer Sample ID	Matrix *	Comp / Grab	Composi	te Start)		site End	Res Cl	# of Ctns	Lig								Lab Sam	ple # / Comments:
MW-19D1 (102921)	GW	G	10/29/2	Time	Date	Time		3	3									
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				70					3									
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				2 1					1	-								
										1	e e							A 100 100 100 100 100 100 100 100 100 10
ustomer Remarks / Special Condi	tions / Possible	Hazards:	Type of Ice	Used:	Wet I	Blue Di	ry No	one	No	SHOR	T HOLDS	PRESE	NT (<7	2 hours): Y	N N	/A	Lab Sample Temperature Info:
ustomer Kemarks / Special Collu	tions / Possible	ilazarus.	Packing Ma		ed:					20100000	racking #	_			80		* 1	Temp Blank Received: Y N NA Therm ID#:
			Radchem s	ample(s) s	creened (<	500 cpm):	Y N	I NA		Samp	es receiv	ved via:	Clier	nt C	ourier	Pace	Courier	Cooler 1 Temp Upon Receipt:or Cooler 1 Therm Corr. Factor:o Cooler 1 Corrected Temp:o
elinquished by/Company: (Signate		10000	e/Time:	. \	Received b	y/Compan	y: (Signat	ure)	1	$\overline{}$	ate/Time			100			E ONLY	Comments:
Inquished by/Company: (Signature) Date/Time: Received by/Company: (Signature)				ture) Date/Time:				Acct	tnum:			Trip Blank Received: Y N NA						
elinquished by/Company: (Signati	ure)	Dat	Date/Time: Received by/Company: (Signature)			Template: Prelogin: PM: PB:						Non Conformance(s): YES / NO Page: Of:						

301 Alpha Drive RIDC Park

Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing America

Client Information Client Contact: Ms. Shwetha Sridharan Company: Sampler: Jane Berstein Colussy, Jill L Colussy, Jill L E-Mail: Jill.Colussy@Eurofinset.com				e of Origin: Maryland			COC No: 180-75506-14547	1.1						
Client Contact: Ms. Shwetha Sridharan	Phone: HH3-	542-	8667	E-Mai	1		set.com		State o	Origin:	aldina	4	Page: Page 1 of 1	The second
Company: ARCADIS U.S., Inc.		P	WSID:	Jill.C	olussye	<u> Luioiiii</u>		alveie E	Request	od .	Justo	,	Job #:	
Address:	Due Date Requested	<u>ن</u> د د د خ	`	U.S.				lalysis	request	eu	T	100	Preservation Code	es:
7550 Teague Road Suite 210 City:	Due Date Requested	Stando	119			800								M - Hexane
Hanover				100		a	Q					3	C - Zn Acetate	N - None O - AsNaO2
State, Zip: MD, 21076	Compliance Project:	A Yes A	No		1		ago							P - Na2O4S Q - Na2SO3
Phone:	PO #:			40		3	1810							R - Na2S2O3 S - H2SO4
302-897-8993(Tel) Email:	30005455.0002. WO #:			01	(0)	3000	18	E C				73		T - TSP Dodecahydrate U - Acetone
shwetha.sridharan@arcadis.com					No)	3 8	100	4060	11			2	J - DI Water	V - MCAA W - pH 4-5
Project Name: Cytec Havre de Grace MD	Project #: 18017987			50	(Yes	4	5 4	~				raine		Z - other (specify)
Cite	SSOW#:				nple	200	Tron Le					con	Other:	
Pennsylvania CyteC	-				1 Sar	Site specific vocs Surfate 300	Ichal I	U	11			er of	-	11.79
			Sample	Matrix			Total	0				dmi		
		Sample (Type C=comp,	(W=water, S=solid, O=waste/oil,	dFill	Sulf	23	-				E Z		
Sample Identification	Sample Date		G=grab) B	T=Tissue, A=Air)	B B	S	40					Tot	Special Ins	tructions/Note:
		><	Preservati	CA MANAGEMENT	XX		500			· 香香		X	S. M. S.	as many the light
MW-19D1 (102921)	10/29/21	1000	G	W		3)	11	a		\perp				
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				- 68	H		\vdash		\rightarrow			100		
	1											(Fig.)		
				1										
Possible Hazard Identification	N				San	ple Dis	posal (A	fee may	be assess	ed if sar	nples are	retain	ed longer than 1 in	month)
Non-Hazard Flammable Skin Irritant Poi	son B Unknow	wn Ba	adiological	-	-	Retur	n To Clier	ال ا	Dispos	al By Lat	,	Arch	nive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)				10	Spe	cial Instr	ructions/Q	C Require	ements:					
Empty Kit Relinquished by:		Date:		100	Time:				. 1	Method of S	Shipment:			AND THE ALL OF
Relinquished by: Keyin Bersten Agent	Date/Time:	1	C	Arcedi	2	Received I	by:	1	_		Date/Time:	N/V	1318	Company A Della
Relinquished by:	Date/Time:	1		Company		Received.	bv:	Je Je	7-		Date/Time:	1	(010	Company
	Date/Time:			Company					`					The same
Relinquished by:	Date/Time:					Received	by:				Date/Time:			Company
Custody Seals Intact: Custody Seal No.:						Cooler Ter	mperature(s	°C and Oth	ner Remarks:				The second	
Δ Yes Δ No														V. oc.onboot

Appendix B

System O&M Laboratory Analytical Reports



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-118155-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S. Inc 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Amanda Turner

Drw G. Cambu

Authorized for release by: 3/26/2021 4:26:38 PM

Carrie Gamber, Senior Project Manager

(412)963-2428

Carrie.Gamber@Eurofinset.com

Designee for

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

Have a Question?



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S. Inc Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-118155-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	15
QC Association Summary	20
Chain of Custody	21
Receipt Checklists	23

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-118155-1

Job ID: 180-118155-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-118155-1

Comments

No additional comments.

Receipt

The samples were received on 3/10/2021 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

GC/MS VOA

The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-01 (030921) (180-118155-1), EW-02 (030921) (180-118155-2), MW-10D (030921) (180-118155-3), COMB EFF (030921) (180-118155-4) and TRIP BLANK (180-118155-5). The requested target analyte list contains 2-Chloroethyl vinyl ether and Acrolein, which are acid-labile compounds that degrade in an acidic medium.

The following samples were diluted to bring the concentration of target analytes within the calibration range: EW-01 (030921) (180-118155-1), EW-02 (030921) (180-118155-2) and COMB EFF (030921) (180-118155-4). Elevated reporting limits (RLs) are provided.

Internal standard (ISTD) response for TBA-d9 for the following sample was outside acceptance criteria: EW-02 (030921) (180-118155-2). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-349658 recovered outside control limits for the following analytes: 2-Chloroethyl vinyl ether, 1,1,2,2-Tetrachloroethane, Acrylonitrile and Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-349658 recovered outside control limits for the following analytes: 1,1,1-Trichloroethane, Carbon tetrachloride and Tetrachloroethene. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The laboratory control sample (LCS) for analytical batch 180-350348 recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane, Acrolein, Acrylonitrile and Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The laboratory control sample duplicate (LCSD) for analytical batch 180-350348 recovered outside control limits for the following analytes: Acrolein, Acrylonitrile and Bromoform. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

The continuing calibration verification (CCV) analyzed in batch 180-350348 was outside the method criteria for the following analyte(s): 1,1,2,2-Tetrachloroethane, Acrolein and Bromoform. (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-349658 was outside the method criteria for the following analyte(s): 1,1,1-Trichloroethane, Carbon tetrachloride and Tetrachloroethene. (LOW). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-349658 was outside the method criteria for the following analyte(s): 1,1,2,2-Tetrachloroethane, Acrylonitrile, 2-Chloroethyl vinyl ether and Bromoform. (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Definitions/Glossary

Client: ARCADIS U.S. Inc Job ID: 180-118155-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

GC/MS VOA

Qualifier

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*- LCS and/or LCSD is outside acceptance limits, low biased.
*+ LCS and/or LCSD is outside acceptance limits, high biased.

The sould associated as liberation and associated in this, right biasect

E Result exceeded calibration range.

Qualifier Description

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly	v used abbreviations may	v or may not	be present in this report.
ADDIEVIALIOII	THESE COMMISSION	/ useu appleviations may	y Oi illay liot	ne bieseiil iii iiiis ieboii

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc Job ID: 180-118155-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-21

 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-118155-1	EW-01 (030921)	Water	03/09/21 10:00	03/10/21 09:00	
180-118155-2	EW-02 (030921)	Water	03/09/21 10:05	03/10/21 09:00	
80-118155-3	MW-10D (030921)	Water	03/09/21 10:10	03/10/21 09:00	
80-118155-4	COMB EFF (030921)	Water	03/09/21 10:15	03/10/21 09:00	
180-118155-5	TRIP BLANK	Water	03/09/21 00:00	03/10/21 09:00	

Job ID: 180-118155-1

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Method Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

MethodMethod DescriptionProtocolLaboratoryEPA 624Volatile Organic Compounds (GC/MS)EPATAL PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Job ID: 180-118155-1

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Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-01 (030921)

Date Collected: 03/09/21 10:00 Date Received: 03/10/21 09:00

Lab Sample ID: 180-118155-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP5		1	5 mL	5 mL	349658	03/17/21 11:30	PJJ	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP5	DL	100	5 mL	5 mL	349658	03/17/21 14:22	PJJ	TAL PIT

Client Sample ID: EW-02 (030921)

Date Collected: 03/09/21 10:05 Date Received: 03/10/21 09:00

Lab Sample ID: 180-118155-2 **Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP5		1	5 mL	5 mL	349658	03/17/21 11:54	PJJ	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP5	DL	500	5 mL	5 mL	349658	03/17/21 14:50	PJJ	TAL PIT

Client Sample ID: MW-10D (030921)

Lab Sample ID: 180-118155-3 Date Collected: 03/09/21 10:10 **Matrix: Water** Date Received: 03/10/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	350348	03/23/21 12:01	PJJ	TAL PIT
	Instrumer	nt ID: CHHP5								

Client Sample ID: COMB EFF (030921)

Lab Sample ID: 180-118155-4 Date Collected: 03/09/21 10:15 **Matrix: Water** Date Received: 03/10/21 09:00

Prep Type Total/NA	Batch Type Analysis Instrumer	Batch Method EPA 624 at ID: CHHP5	Run	Pactor 1	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 349658	Prepared or Analyzed 03/17/21 12:43	Analyst PJJ	Lab TAL PIT
Total/NA	Analysis Instrumer	EPA 624 nt ID: CHHP5	DL	200	5 mL	5 mL	349658	03/17/21 15:39	PJJ	TAL PIT

Client Sample ID: TRIP BLANK

Date Collected: 03/09/21 00:00

Date Received: 03/10/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	349658	03/17/21 09:29		TAL PIT
	Instrumer	nt ID: CHHP5								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Sample ID: 180-118155-5

Matrix: Water

Lab Chronicle

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Analyst References:

Lab: TAL PIT

Batch Type: Analysis
PJJ = Patrick Journet

Job ID: 180-118155-1

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Client Sample ID: EW-01 (030921) Lab Sample ID: 180-118155-1

Date Collected: 03/09/21 10:00 Date Received: 03/10/21 09:00

Matrix: Water

Job ID: 180-118155-1

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*_	1.0	0.60	ug/L			03/17/21 11:30	1
1,1,2,2-Tetrachloroethane	ND	*+	1.0	0.60	ug/L			03/17/21 11:30	1
1,1,2-Trichloroethane	1.2		1.0	0.45	ug/L			03/17/21 11:30	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/17/21 11:30	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/17/21 11:30	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/17/21 11:30	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/17/21 11:30	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/17/21 11:30	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/17/21 11:30	1
2-Chloroethyl vinyl ether	ND	*+	2.0	1.7	ug/L			03/17/21 11:30	1
Acrolein	ND		20	16	ug/L			03/17/21 11:30	1
Acrylonitrile	ND	*+	20	7.8	ug/L			03/17/21 11:30	1
Benzene	ND		1.0	0.60	ug/L			03/17/21 11:30	1
Bromoform	ND	*+	1.0	0.98	ug/L			03/17/21 11:30	1
Bromomethane	ND		1.0	0.89	ug/L			03/17/21 11:30	1
Carbon disulfide	ND		1.0	0.88	ug/L			03/17/21 11:30	1
Carbon tetrachloride	ND	*_	1.0	0.88	ug/L			03/17/21 11:30	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/17/21 11:30	1
Chloroform	ND		1.0	0.60	ug/L			03/17/21 11:30	1
Chloromethane	ND		1.0	0.90	ug/L			03/17/21 11:30	1
cis-1,2-Dichloroethene	2.4		1.0	0.71	ug/L			03/17/21 11:30	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/17/21 11:30	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/17/21 11:30	1
Methylene Chloride	ND		1.0	0.89	ug/L			03/17/21 11:30	1
Tetrachloroethene	ND	*_	1.0	0.47	ug/L			03/17/21 11:30	1
Toluene	ND		1.0	0.46	ug/L			03/17/21 11:30	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			03/17/21 11:30	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/17/21 11:30	1
Trichloroethene	6.7		1.0	0.69	ug/L			03/17/21 11:30	1
Vinyl chloride	2.4		1.0	0.40	ug/L			03/17/21 11:30	1
Dibromochloromethane	ND		1.0	0.84	ug/L			03/17/21 11:30	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			03/17/21 11:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		42 - 142			-		03/17/21 11:30	1
4-Bromofluorobenzene (Surr)	71		54 - 114					03/17/21 11:30	1
Toluene-d8 (Surr)	83		61 - 125					03/17/21 11:30	1
Dibromofluoromethane (Surr)	85		60 - 150					03/17/21 11:30	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	820		100	57	ug/L			03/17/21 14:22	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	76		42 - 142					03/17/21 14:22	100
4-Bromofluorobenzene (Surr)	60		54 - 114					03/17/21 14:22	100
Toluene-d8 (Surr)	64		61 - 125					03/17/21 14:22	100
Dibromofluoromethane (Surr)	77		60 - 150					03/17/21 14:22	100

Eurofins TestAmerica, Pittsburgh

Client Sample ID: EW-02 (030921) Lab Sample ID: 180-118155-2

Date Collected: 03/09/21 10:05 Date Received: 03/10/21 09:00

Matrix: Water

Job ID: 180-118155-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*_	1.0	0.60	ug/L			03/17/21 11:54	1
1,1,2,2-Tetrachloroethane	ND	*+	1.0	0.60	ug/L			03/17/21 11:54	1
1,1,2-Trichloroethane	13		1.0	0.45	ug/L			03/17/21 11:54	1
1,1-Dichloroethane	1.8		1.0	0.31	ug/L			03/17/21 11:54	1
1,1-Dichloroethene	0.57	J	1.0	0.55	ug/L			03/17/21 11:54	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/17/21 11:54	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/17/21 11:54	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/17/21 11:54	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/17/21 11:54	1
Acrolein	ND		20	16	ug/L			03/17/21 11:54	1
Acrylonitrile	ND	*+	20	7.8	ug/L			03/17/21 11:54	1
Benzene	ND		1.0	0.60	ug/L			03/17/21 11:54	1
Bromoform	ND	*+	1.0	0.98	ug/L			03/17/21 11:54	1
Bromomethane	ND		1.0	0.89	ug/L			03/17/21 11:54	1
Carbon disulfide	ND		1.0	0.88	ug/L			03/17/21 11:54	1
Carbon tetrachloride	ND	*_	1.0	0.88	ug/L			03/17/21 11:54	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/17/21 11:54	1
Chloroform	ND		1.0	0.60	ug/L			03/17/21 11:54	1
Chloromethane	0.95	J	1.0	0.90	ug/L			03/17/21 11:54	1
cis-1,2-Dichloroethene	17		1.0	0.71	ug/L			03/17/21 11:54	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/17/21 11:54	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/17/21 11:54	1
Toluene	ND		1.0	0.46	ug/L			03/17/21 11:54	1
trans-1,2-Dichloroethene	2.3		1.0	0.67	ug/L			03/17/21 11:54	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/17/21 11:54	1
Trichloroethene	8.8		1.0	0.69	ug/L			03/17/21 11:54	1
Vinyl chloride	38		1.0	0.40	ug/L			03/17/21 11:54	1
Dibromochloromethane	ND		1.0	0.84	ug/L			03/17/21 11:54	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			03/17/21 11:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		42 - 142					03/17/21 11:54	1
4-Bromofluorobenzene (Surr)	91		54 - 114					03/17/21 11:54	1
Toluene-d8 (Surr)	105		61 - 125					03/17/21 11:54	1
Dibromofluoromethane (Surr)	96		60 - 150					03/17/21 11:54	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	9000		500	290	ug/L			03/17/21 14:50	500
2-Chloroethyl vinyl ether	ND	*+	1000	860	ug/L			03/17/21 14:50	500
Methylene Chloride	13000		500	440	ug/L			03/17/21 14:50	500
Tetrachloroethene	ND	*-	500	230	ug/L			03/17/21 14:50	500

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		42 - 142	_		03/17/21 14:50	500
4-Bromofluorobenzene (Surr)	80		54 - 114			03/17/21 14:50	500
Toluene-d8 (Surr)	89		61 - 125			03/17/21 14:50	500
Dibromofluoromethane (Surr)	99		60 - 150			03/17/21 14:50	500

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-10D (030921)

Date Collected: 03/09/21 10:10 Date Received: 03/10/21 09:00 Lab Sample ID: 180-118155-3

Matrix: Water

Method: EPA 624 - Volatile Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			03/23/21 12:01	1
1,1,2,2-Tetrachloroethane	ND	*+	1.0	0.60	ug/L			03/23/21 12:01	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			03/23/21 12:01	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/23/21 12:01	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/23/21 12:01	1
1,2-Dichloroethane	2.4		1.0	0.57	ug/L			03/23/21 12:01	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/23/21 12:01	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/23/21 12:01	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/23/21 12:01	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/23/21 12:01	1
2-Chloroethyl vinyl ether	ND		2.0		ug/L			03/23/21 12:01	1
Acrolein	ND	*+	20	16	ug/L			03/23/21 12:01	1
Acrylonitrile	ND	*+	20	7.8	ug/L			03/23/21 12:01	1
Benzene	ND		1.0		ug/L			03/23/21 12:01	1
Bromoform	ND	*+	1.0	0.98	ug/L			03/23/21 12:01	1
Bromomethane	ND		1.0	0.89	ug/L			03/23/21 12:01	1
Carbon disulfide	ND		1.0	0.88				03/23/21 12:01	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			03/23/21 12:01	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/23/21 12:01	1
Chloroform	ND		1.0		ug/L			03/23/21 12:01	1
Chloromethane	ND		1.0	0.90	ug/L			03/23/21 12:01	1
cis-1,2-Dichloroethene	1.0		1.0	0.71	ug/L			03/23/21 12:01	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/23/21 12:01	1
Ethylbenzene	ND		1.0	0.51	_			03/23/21 12:01	1
Methylene Chloride	ND		1.0	0.89	ug/L			03/23/21 12:01	1
Tetrachloroethene	ND		1.0	0.47	ug/L			03/23/21 12:01	1
Toluene	ND		1.0	0.46	_			03/23/21 12:01	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			03/23/21 12:01	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			03/23/21 12:01	1
Trichloroethene	ND		1.0	0.69	ug/L			03/23/21 12:01	1
Vinyl chloride	ND		1.0	0.40				03/23/21 12:01	1
Dibromochloromethane	ND		1.0	0.84	ug/L			03/23/21 12:01	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			03/23/21 12:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			42 - 142			-		03/23/21 12:01	1
4-Bromofluorobenzene (Surr)	75		54 - 114					03/23/21 12:01	1
Toluene-d8 (Surr)	89		61 - 125					03/23/21 12:01	1
			<u></u>						

Client Sample ID: COMB EFF (030921)

108

Date Collected: 03/09/21 10:15

Dibromofluoromethane (Surr)

Date Received: 03/10/21 09:00

_ab	Samp	le II): 1	80	-1	18	155-4	
						_		

03/23/21 12:01

Matrix: Water

Method: EPA 624 - Volatile	Organic Comp	ounds (GC/l	MS)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*_	1.0	0.60	ug/L			03/17/21 12:43	1
1,1,2,2-Tetrachloroethane	ND	*+	1.0	0.60	ug/L			03/17/21 12:43	1
1,1,2-Trichloroethane	3.0		1.0	0.45	ug/L			03/17/21 12:43	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/17/21 12:43	1

60 - 150

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 180-118155-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: COMB EFF (030921)

Date Collected: 03/09/21 10:15
Date Received: 03/10/21 09:00

Surrogate

Toluene-d8 (Surr)

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Lab Sample ID: 180-118155-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/17/21 12:43	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/17/21 12:43	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/17/21 12:43	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/17/21 12:43	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/17/21 12:43	1
2-Chloroethyl vinyl ether	ND	*+	2.0	1.7	ug/L			03/17/21 12:43	1
Acrolein	ND		20	16	ug/L			03/17/21 12:43	1
Acrylonitrile	ND	*+	20	7.8	ug/L			03/17/21 12:43	1
Benzene	ND		1.0	0.60	ug/L			03/17/21 12:43	1
Bromoform	ND	*+	1.0	0.98	ug/L			03/17/21 12:43	1
Bromomethane	ND		1.0	0.89	ug/L			03/17/21 12:43	1
Carbon disulfide	ND		1.0	0.88	ug/L			03/17/21 12:43	1
Carbon tetrachloride	ND	*_	1.0	0.88	ug/L			03/17/21 12:43	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/17/21 12:43	1
Chloroform	ND		1.0	0.60	ug/L			03/17/21 12:43	1
Chloromethane	ND		1.0	0.90	ug/L			03/17/21 12:43	1
cis-1,2-Dichloroethene	6.2		1.0	0.71	ug/L			03/17/21 12:43	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/17/21 12:43	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/17/21 12:43	1
Tetrachloroethene	ND	*_	1.0	0.47	ug/L			03/17/21 12:43	1
Toluene	ND		1.0	0.46	ug/L			03/17/21 12:43	1
trans-1,2-Dichloroethene	1.5		1.0	0.67	ug/L			03/17/21 12:43	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/17/21 12:43	1
Trichloroethene	4.4		1.0	0.69	ug/L			03/17/21 12:43	1
Vinyl chloride	12		1.0	0.40	ug/L			03/17/21 12:43	1
Dibromochloromethane	ND		1.0	0.84	ug/L			03/17/21 12:43	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			03/17/21 12:43	1
Surrogate	%Recovery	Qualifier	Limits			_	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		42 - 142			-		03/17/21 12:43	1
4-Bromofluorobenzene (Surr)	73		54 - 114					03/17/21 12:43	1
Toluene-d8 (Surr)	87		61 - 125					03/17/21 12:43	1
Dibromofluoromethane (Surr)	90		60 - 150					03/17/21 12:43	1
Method: EPA 624 - Volatile	-	•	C/MS) - DL						
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	1700		200		ug/L			03/17/21 15:39	200
Methylene Chloride	2700		200	180	ug/L			03/17/21 15:39	200

Analyzed

03/17/21 15:39

03/17/21 15:39

03/17/21 15:39

03/17/21 15:39

Prepared

Limits

42 - 142

54 - 114

61 - 125

60 - 150

%Recovery Qualifier

104

79

89

107

2

4

6

8

10

12

13

3/26/2021

Dil Fac

200

200

200

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 180-118155-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Date Collected: 03/09/21 00:00 Date Received: 03/10/21 09:00 Lab Sample ID: 180-118155-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*_	1.0	0.60	ug/L			03/17/21 09:29	1
1,1,2,2-Tetrachloroethane	ND	*+	1.0	0.60	ug/L			03/17/21 09:29	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			03/17/21 09:29	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/17/21 09:29	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/17/21 09:29	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			03/17/21 09:29	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/17/21 09:29	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/17/21 09:29	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/17/21 09:29	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/17/21 09:29	1
2-Chloroethyl vinyl ether	ND	*+	2.0	1.7	ug/L			03/17/21 09:29	1
Acrolein	ND		20	16	ug/L			03/17/21 09:29	1
Acrylonitrile	ND	*+	20	7.8	ug/L			03/17/21 09:29	1
Benzene	ND		1.0	0.60	ug/L			03/17/21 09:29	1
Bromoform	ND	*+	1.0	0.98	ug/L			03/17/21 09:29	1
Bromomethane	ND		1.0	0.89	ug/L			03/17/21 09:29	1
Carbon disulfide	ND		1.0	0.88				03/17/21 09:29	1
Carbon tetrachloride	ND	*_	1.0	0.88	ug/L			03/17/21 09:29	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/17/21 09:29	1
Chloroform	ND		1.0	0.60				03/17/21 09:29	1
Chloromethane	ND		1.0	0.90	ug/L			03/17/21 09:29	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			03/17/21 09:29	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/17/21 09:29	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/17/21 09:29	1
Methylene Chloride	ND		1.0	0.89	ug/L			03/17/21 09:29	1
Tetrachloroethene	ND	*_	1.0	0.47	ug/L			03/17/21 09:29	1
Toluene	ND		1.0	0.46	ug/L			03/17/21 09:29	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			03/17/21 09:29	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/17/21 09:29	1
Trichloroethene	ND		1.0	0.69	ug/L			03/17/21 09:29	1
Vinyl chloride	ND		1.0	0.40	ug/L			03/17/21 09:29	1
Dibromochloromethane	ND		1.0	0.84	-			03/17/21 09:29	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			03/17/21 09:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95	_	42 - 142			-		03/17/21 09:29	1
4-Bromofluorobenzene (Surr)	75		54 - 114					03/17/21 09:29	1
Toluene-d8 (Surr)	78		61 - 125					03/17/21 09:29	1

3/26/2021

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Client: ARCADIS U.S. Inc Job ID: 180-118155-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-349658/6

Matrix: Water

Analysis Batch: 349658

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			03/17/21 09:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			03/17/21 09:02	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			03/17/21 09:02	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/17/21 09:02	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/17/21 09:02	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			03/17/21 09:02	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/17/21 09:02	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/17/21 09:02	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/17/21 09:02	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/17/21 09:02	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			03/17/21 09:02	1
Acrolein	ND		20	16	ug/L			03/17/21 09:02	1
Acrylonitrile	ND		20	7.8	ug/L			03/17/21 09:02	1
Benzene	ND		1.0	0.60	ug/L			03/17/21 09:02	1
Bromoform	ND		1.0	0.98	ug/L			03/17/21 09:02	1
Bromomethane	ND		1.0	0.89	ug/L			03/17/21 09:02	1
Carbon disulfide	ND		1.0	0.88	ug/L			03/17/21 09:02	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			03/17/21 09:02	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/17/21 09:02	1
Chloroform	ND		1.0	0.60	ug/L			03/17/21 09:02	1
Chloromethane	ND		1.0	0.90	ug/L			03/17/21 09:02	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			03/17/21 09:02	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/17/21 09:02	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/17/21 09:02	1
Methylene Chloride	ND		1.0	0.89	ug/L			03/17/21 09:02	1
Tetrachloroethene	ND		1.0	0.47	ug/L			03/17/21 09:02	1
Toluene	ND		1.0	0.46	ug/L			03/17/21 09:02	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			03/17/21 09:02	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/17/21 09:02	1
Trichloroethene	ND		1.0	0.69	ug/L			03/17/21 09:02	1
Vinyl chloride	ND		1.0	0.40	ug/L			03/17/21 09:02	1
Dibromochloromethane	ND		1.0		ug/L			03/17/21 09:02	1
Dichlorobromomethane	ND		1.0		ug/L			03/17/21 09:02	1

MB MB %Recovery Qualifier Limits Surrogate Prepared Analyzed 1,2-Dichloroethane-d4 (Surr) 114 42 - 142 03/17/21 09:02 54 - 114 4-Bromofluorobenzene (Surr) 109 03/17/21 09:02 Toluene-d8 (Surr) 108 61 - 125 03/17/21 09:02 Dibromofluoromethane (Surr) 60 - 150 03/17/21 09:02 113

Lab Sample ID: LCS 180-349658/1002

Matrix: Water

Analysis Batch: 349658

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	6.91	*_	ug/L		69	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	15.4	*+	ug/L		154	60 - 140	
1,1,2-Trichloroethane	10.0	11.0		ug/L		110	71 - 129	

Eurofins TestAmerica, Pittsburgh

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Page 15 of 23

3/26/2021

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-118155-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-349658/1002

Matrix: Water

Analysis Batch: 349658

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier	Unit	D %Re	ec Limits	
1,1-Dichloroethane	10.0	8.45		ug/L		35 73 ₋ 127	,
1,1-Dichloroethene	10.0	5.97		ug/L	(50 50 - 150)
1,2-Dichloroethane	10.0	11.5		ug/L	11	15 70 - 130)
1,2-Dichloropropane	10.0	9.53		ug/L	(95 35 - 150)
1,2-Dichlorobenzene	10.0	9.37		ug/L	9	94 65 - 135	j
1,3-Dichlorobenzene	10.0	8.01		ug/L	8	30 73 - 127	•
1,4-Dichlorobenzene	10.0	8.58		ug/L	8	36 65 - 135	,
2-Chloroethyl vinyl ether	20.0	39.1	*+	ug/L	19	95 10 - 150)
Acrolein	30.0	23.0		ug/L	7	77 60 - 140)
Acrylonitrile	100	157	*+	ug/L	15	57 60 - 140	
Benzene	10.0	8.80		ug/L	8	38 65 ₋ 135	i
Bromoform	10.0	15.6	*+	ug/L	15	56 71 - 129)
Bromomethane	10.0	11.1		ug/L	1	11 15 - 150	
Carbon disulfide	10.0	6.53		ug/L	6	65 44 ₋ 150)
Carbon tetrachloride	10.0	6.18	*-	ug/L	6	32 73 ₋ 127	•
Chlorobenzene	10.0	8.65		ug/L	8	37 66 ₋ 134	
Chloroform	10.0	9.54		ug/L	(95 70 - 135	j
Chloromethane	10.0	8.99		ug/L	(90 10 - 150)
cis-1,2-Dichloroethene	10.0	8.61		ug/L	8	39 - 150)
cis-1,3-Dichloropropene	10.0	10.5		ug/L	10	05 25 - 150)
Ethylbenzene	10.0	7.63		ug/L	7	76 60 ₋ 140)
Methylene Chloride	10.0	9.16		ug/L	(92 60 - 140)
Tetrachloroethene	10.0	6.98	*_	ug/L	7	70 74 - 126	;
Toluene	10.0	8.29		ug/L	8	33 75 - 125	;
trans-1,2-Dichloroethene	10.0	7.79		ug/L	-	78 70 - 130)
trans-1,3-Dichloropropene	10.0	10.3		ug/L	10	03 50 - 150)
Trichloroethene	10.0	7.73		ug/L	7	77 67 - 133	}
Vinyl chloride	10.0	6.66		ug/L	(67 10 ₋ 150)
Dibromochloromethane	10.0	11.1		ug/L	1	11 70 - 135	•
Dichlorobromomethane	10.0	10.7		ug/L	10	07 65 - 135	;

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		42 - 142
4-Bromofluorobenzene (Surr)	85		54 - 114
Toluene-d8 (Surr)	78		61 - 125
Dibromofluoromethane (Surr)	91		60 - 150

Lab Sample ID: MB 180-350348/9

Matrix: Water

Analysis Batch: 350348

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			03/23/21 10:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			03/23/21 10:40	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			03/23/21 10:40	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			03/23/21 10:40	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			03/23/21 10:40	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			03/23/21 10:40	1

Eurofins TestAmerica, Pittsburgh

Page 16 of 23

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-118155-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-350348/9

Matrix: Water

Analysis Batch: 350348

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.0	0.66	ug/L			03/23/21 10:40	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			03/23/21 10:40	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			03/23/21 10:40	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			03/23/21 10:40	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			03/23/21 10:40	1
Acrolein	ND		20	16	ug/L			03/23/21 10:40	1
Acrylonitrile	ND		20	7.8	ug/L			03/23/21 10:40	1
Benzene	ND		1.0	0.60	ug/L			03/23/21 10:40	1
Bromoform	ND		1.0	0.98	ug/L			03/23/21 10:40	1
Bromomethane	ND		1.0	0.89	ug/L			03/23/21 10:40	1
Carbon disulfide	ND		1.0	0.88	ug/L			03/23/21 10:40	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			03/23/21 10:40	1
Chlorobenzene	ND		1.0	0.50	ug/L			03/23/21 10:40	1
Chloroform	ND		1.0	0.60	ug/L			03/23/21 10:40	1
Chloromethane	ND		1.0	0.90	ug/L			03/23/21 10:40	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			03/23/21 10:40	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			03/23/21 10:40	1
Ethylbenzene	ND		1.0	0.51	ug/L			03/23/21 10:40	1
Methylene Chloride	ND		1.0	0.89	ug/L			03/23/21 10:40	1
Tetrachloroethene	ND		1.0	0.47	ug/L			03/23/21 10:40	1
Toluene	ND		1.0	0.46	ug/L			03/23/21 10:40	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			03/23/21 10:40	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			03/23/21 10:40	1
Trichloroethene	ND		1.0	0.69	ug/L			03/23/21 10:40	1
Vinyl chloride	ND		1.0		ug/L			03/23/21 10:40	1
Dibromochloromethane	ND		1.0		ug/L			03/23/21 10:40	1
Dichlorobromomethane	ND		1.0		ug/L			03/23/21 10:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		42 - 142	$\overline{}$	3/23/21 10:40	1
4-Bromofluorobenzene (Surr)	67		54 - 114	03	3/23/21 10:40	1
Toluene-d8 (Surr)	79		61 - 125	03	3/23/21 10:40	1
Dibromofluoromethane (Surr)	88		60 - 150	0:	3/23/21 10:40	1

Lab Sample ID: LCS 180-350348/6

Matrix: Water

Analysis Batch: 350348

Client Sample	ID: Lab Control Sample
	Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	7.48		ug/L		75	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	14.8	*+	ug/L		148	60 - 140	
1,1,2-Trichloroethane	10.0	9.98		ug/L		100	71 - 129	
1,1-Dichloroethane	10.0	8.25		ug/L		83	73 - 127	
1,1-Dichloroethene	10.0	7.49		ug/L		75	50 - 150	
1,2-Dichloroethane	10.0	9.55		ug/L		95	70 - 130	
1,2-Dichloropropane	10.0	8.42		ug/L		84	35 - 150	
1,2-Dichlorobenzene	10.0	9.08		ug/L		91	65 - 135	
1,3-Dichlorobenzene	10.0	7.81		ug/L		78	73 - 127	

Eurofins TestAmerica, Pittsburgh

Page 17 of 23

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3/26/2021

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-118155-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-350348/6

Matrix: Water

Analysis Batch: 350348

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS			%Rec.
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits
1,4-Dichlorobenzene	10.0	8.43		ug/L	84	65 - 135
2-Chloroethyl vinyl ether	20.0	25.3		ug/L	127	10 - 150
Acrolein	30.0	55.1	E *+	ug/L	184	60 - 140
Acrylonitrile	100	143	*+	ug/L	143	60 - 140
Benzene	10.0	8.57		ug/L	86	65 - 135
Bromoform	10.0	13.6	*+	ug/L	136	71 - 129
Bromomethane	10.0	8.36		ug/L	84	15 - 150
Carbon disulfide	10.0	7.17		ug/L	72	44 - 150
Carbon tetrachloride	10.0	7.49		ug/L	75	73 - 127
Chlorobenzene	10.0	8.80		ug/L	88	66 - 134
Chloroform	10.0	8.41		ug/L	84	70 - 135
Chloromethane	10.0	9.67		ug/L	97	10 - 150
cis-1,2-Dichloroethene	10.0	8.48		ug/L	85	39 - 150
cis-1,3-Dichloropropene	10.0	9.15		ug/L	91	25 - 150
Ethylbenzene	10.0	8.39		ug/L	84	60 - 140
Methylene Chloride	10.0	6.93		ug/L	69	60 - 140
Tetrachloroethene	10.0	8.39		ug/L	84	74 - 126
Toluene	10.0	8.80		ug/L	88	75 - 125
trans-1,2-Dichloroethene	10.0	8.02		ug/L	80	70 - 130
trans-1,3-Dichloropropene	10.0	9.44		ug/L	94	50 - 150
Trichloroethene	10.0	8.14		ug/L	81	67 - 133
Vinyl chloride	10.0	7.02		ug/L	70	10 - 150
Dibromochloromethane	10.0	9.55		ug/L	95	70 - 135
Dichlorobromomethane	10.0	8.92		ug/L	89	65 - 135

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		42 - 142
4-Bromofluorobenzene (Surr)	83		54 - 114
Toluene-d8 (Surr)	78		61 - 125
Dibromofluoromethane (Surr)	77		60 - 150

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water Analysis Batch: 350348

Lab Sample ID: LCSD 180-350348/7

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	7.56		ug/L		76	75 - 125	1	20
1,1,2,2-Tetrachloroethane	10.0	14.0		ug/L		140	60 - 140	6	20
1,1,2-Trichloroethane	10.0	9.78		ug/L		98	71 - 129	2	20
1,1-Dichloroethane	10.0	8.18		ug/L		82	73 - 127	1	20
1,1-Dichloroethene	10.0	7.40		ug/L		74	50 - 150	1	20
1,2-Dichloroethane	10.0	9.66		ug/L		97	70 - 130	1	20
1,2-Dichloropropane	10.0	8.81		ug/L		88	35 - 150	5	20
1,2-Dichlorobenzene	10.0	9.41		ug/L		94	65 - 135	4	20
1,3-Dichlorobenzene	10.0	7.60		ug/L		76	73 - 127	3	20
1,4-Dichlorobenzene	10.0	8.20		ug/L		82	65 - 135	3	20
2-Chloroethyl vinyl ether	20.0	26.7		ug/L		133	10 - 150	5	20
Acrolein	30.0	46.6	*+	ug/L		155	60 - 140	17	20

Eurofins TestAmerica, Pittsburgh

Page 18 of 23

3/26/2021

Client: ARCADIS U.S. Inc

Job ID: 180-118155-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 180-350348/7

Matrix: Water

Analysis Batch: 350348

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acrylonitrile	100	147	*+	ug/L		147	60 - 140	3	20
Benzene	10.0	8.77		ug/L		88	65 - 135	2	20
Bromoform	10.0	13.4	*+	ug/L		134	71 - 129	2	20
Bromomethane	10.0	8.97		ug/L		90	15 - 150	7	20
Carbon disulfide	10.0	7.29		ug/L		73	44 - 150	2	20
Carbon tetrachloride	10.0	7.30		ug/L		73	73 - 127	3	20
Chlorobenzene	10.0	8.45		ug/L		84	66 - 134	4	20
Chloroform	10.0	8.60		ug/L		86	70 - 135	2	20
Chloromethane	10.0	9.27		ug/L		93	10 - 150	4	20
cis-1,2-Dichloroethene	10.0	8.41		ug/L		84	39 - 150	1	20
cis-1,3-Dichloropropene	10.0	9.58		ug/L		96	25 - 150	5	20
Ethylbenzene	10.0	8.29		ug/L		83	60 - 140	1	20
Methylene Chloride	10.0	7.02		ug/L		70	60 - 140	1	20
Tetrachloroethene	10.0	8.00		ug/L		80	74 - 126	5	20
Toluene	10.0	8.73		ug/L		87	75 - 125	1	20
trans-1,2-Dichloroethene	10.0	8.07		ug/L		81	70 - 130	1	20
trans-1,3-Dichloropropene	10.0	9.47		ug/L		95	50 - 150	0	20
Trichloroethene	10.0	8.41		ug/L		84	67 - 133	3	20
Vinyl chloride	10.0	7.19		ug/L		72	10 - 150	2	20
Dibromochloromethane	10.0	9.45		ug/L		95	70 - 135	1	20
Dichlorobromomethane	10.0	9.26		ug/L		93	65 - 135	4	20

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		42 - 142
4-Bromofluorobenzene (Surr)	81		54 - 114
Toluene-d8 (Surr)	75		61 - 125
Dibromofluoromethane (Surr)	81		60 - 150

Eurofins TestAmerica, Pittsburgh

3/26/2021

Page 19 of 23

QC Association Summary

Client: ARCADIS U.S. Inc Job ID: 180-118155-1

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 349658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-118155-1	EW-01 (030921)	Total/NA	Water	EPA 624	
180-118155-1 - DL	EW-01 (030921)	Total/NA	Water	EPA 624	
180-118155-2	EW-02 (030921)	Total/NA	Water	EPA 624	
180-118155-2 - DL	EW-02 (030921)	Total/NA	Water	EPA 624	
180-118155-4	COMB EFF (030921)	Total/NA	Water	EPA 624	
180-118155-4 - DL	COMB EFF (030921)	Total/NA	Water	EPA 624	
180-118155-5	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-349658/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-349658/1002	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 350348

Lab Sample ID 180-118155-3	Client Sample ID MW-10D (030921)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-350348/9	Method Blank	Total/NA	Water	EPA 624	
LCS 180-350348/6	Lab Control Sample	Total/NA	Water	EPA 624	
LCSD 180-350348/7	Lab Control Sample Dup	Total/NA	Water	EPA 624	

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OW LEAST IN SHRINGSHING ALL TESTING 137 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Special Instructions/Note: P - Na204S Q - Na2SO3 R - Na2S2O3 Months COC No: 180-47017-9985.4 Preservation Codes G - Amchlor H - Ascorbic Acid 00 Page: Page 4 of 5 A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH J - DI Water K - EDTA L - EDA R 180-118155 Chain of Custody Aethod of Shipment Baltimore **Analysis Requested** Cooler Temperature(s) °C and Other Remarks: Special Instructions/QC Requirements: Phone: E-Mail: E-Mail: P43アゲイカタC veronica.bortot@testamericainc.com Received by: 00W Lab PM: Bortot, Veronica M MN Chain of Custody Record 624 Company LAN Company Arcadis (W=water, S=solid, O=waste/oil, on Code: Matrix Water Standard Radiological Type (C=comp, G=grab) 204 3000 5455,000 Sample Feild 9 (1) () () 1 200 Norma 000/ Sample 3/9/21/1005 3/4/21 1015 3/9/21 1010 Date: Unknown Andy FAT Requested (days): Due Date Requested: 12/ 3/4/21 Sample Date Date/Time: **9/9** / Project #: 18017987 SSOW#: 1 Poison B Skin Irritant 030921 030921 Deliverable Requested: I, II, III, IV, Other (specify) 030921 030921 Solvar Custody Seal No. Phone (412) 963-7058 Fax (412) 963-2468 Fi. C **TestAmerica Pittsburgh** Flammable Amanda.Duggins@arcadis-us.com Possible Hazard Identification Plank 7550 Teague Road Suite 210 301 Alpha Drive RIDC Park EW-07 Andy Empty Kit Relinquished by: EW-01 Custody Seals Intact: △ Yes △ No Client Information Sample Identification Pittsburgh, PA 15238 Client Contact: Ms. Amanda Duggins Haverede Grace, MD Cvtecomo ARCADIS U.S., Inc. 410-923-7808(Tel) Non-Hazard elinquished by: inquished by: State, Zip: MD, 21076 Hanover

Do Not Lift Using This Tag



SHIP DATE: 09MAR21 ACTWGT: 15.00 LB CAD: 1030460/INET4340

BILL RECIPIENT

SAMPLE RECEIVING **TEST AMERICA PITTSBURGH**

301 ALPHA DR **RIDC PARK** PITTSBURGH PA 15238

REF: ARCADIS CYTEC





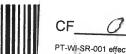


7731 1220 2915

WED - 10 MAR 10:30A PRIORITY OVERNIGHT

Uncorrected temp Thermometer ID

15238



Initials

Page 22 of 23

Client: ARCADIS U.S. Inc Job Number: 180-118155-1

Login Number: 118155 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Creator. Walson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-120179-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S. Inc 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Amanda Turner

Authorized for release by:

5/10/2021 2:16:59 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S. Inc Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-120179-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	15
QC Association Summary	26
Chain of Custody	28
Receipt Checklists	32

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Job ID: 180-120179-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-120179-1

Receipt

The samples were received on 4/17/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2° C.

GC/MS VOA

The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: POTW OUTFALL (041621) (180-120179-1), TRIP BLANK (180-120179-2) and (180-120179-E-1 DU). The requested target analyte list contains 2-Chloroethyl vinyl ether and Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): TRIP BLANK (180-120179-2).

Due to the concentration of target compounds detected, sample POTW OUTFALL (041621) (180-120179-1) was analyzed at a dilution. Elevated reporting limits (RLs) are provided.

Internal standard (ISTD) response for TBA-d9 for the following sample was outside acceptance criteria: (MB 180-354671/6). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

The laboratory control sample (LCS) for batch 180-354671 recovered outside control limits for the following analytes: Acrolein, 1,1,2,2-Tetrachloroethane, Dibromochloromethane, 1,1,2-Trichloroethane, Methylene Chloride, 1,2-Dichloroethane, Acrylonitrile and Bromoform. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The laboratory control sample (LCS) for batch 180-355217 recovered outside control limits for the following analytes: 1,1,1-Trichloroethane and Carbon tetrachloride. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The continuing calibration verification (CCV) analyzed in batch 180-354671 was outside the method criteria for the following analyte(s): Acrolein, 1,1,2,2-Tetrachloroethane, Dibromochloromethane, 1,1,2-Trichloroethane, Methylene Chloride, 1,2-Dichloroethane, Acrylonitrile and Bromoform.(LOW). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) associated with batch 180-355217 recovered outside acceptance criteria, low biased, for 1,1,1-Trichloroethane and Carbon tetrachloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

GC/MS Semi VOA

The continuing calibration verification (CCV) associated with batch 180-354322 recovered above the upper control limit for 2,4-Dinitrophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Eurofins TestAmerica, Pittsburgh

5/10/2021

Page 3 of 32

Case Narrative

Client: ARCADIS U.S. Inc

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

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GC	/ IVI	5 1	ľυ	А

Qualifier Description

*- LCS and/or LCSD is outside acceptance limits, low biased.

E Result exceeded calibration range.F3 Duplicate RPD exceeds the control limit

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21
California	State	2891	04-30-21 *
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-21 *
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21 *
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-21 *
Texas	NELAP	T104704528	03-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-21

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 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Asset ID

 180-120179-1
 POTW OUTFALL (041621)
 Water
 04/16/21 12:50
 04/17/21 10:30

 180-120179-2
 TRIP BLANK
 Water
 04/16/21 00:00
 04/17/21 10:30

Job ID: 180-120179-1

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46

Method Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Method **Method Description** Protocol Laboratory Volatile Organic Compounds (GC/MS) **EPA 624** TAL PIT EPA **EPA 625** Semivolatile Organic Compounds (GC/MS) 40CFR136A **TAL PIT** TAL PIT EPA 200.7 Rev 4 Metals (ICP) **EPA** EPA 245.1 Rev. Mercury (CVAA) EPA TAL PIT SM 4500CN E Total Cyanide SM TAL PIT 200.7 Preparation, Total Recoverable Metals EPA TAL PIT 245.1 Preparation, Mercury EPA TAL PIT 625 Liquid-Liquid Extraction 40CFR136A TAL PIT

Protocol References:

SM 4500 CN C

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

Cyanide, Distillation

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Job ID: 180-120179-1

TAL PIT

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Lab Chronicle

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1 Date Collected: 04/16/21 12:50 **Matrix: Water**

Date Received: 04/17/21 10:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP5		1	5 mL	5 mL	354671	04/27/21 19:21	SW1	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP5	RADL	200	5 mL	5 mL	355217	04/30/21 19:12	DLF	TAL PIT
Total/NA	Prep	625			1060 mL	10.0 mL	353647	04/19/21 11:23	BJT	TAL PIT
Total/NA	Analysis Instrumen	EPA 625 t ID: CH71		1	1 mL	1 mL	354322	04/23/21 23:52	VVP	TAL PIT
Total Recoverable	Prep	200.7			50 mL	50 mL	355176	04/30/21 08:48	TLP	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 200.7 Rev 4 t ID: C		1			355531	05/03/21 15:47	RJR	TAL PIT
Total/NA	Prep	245.1			25 mL	25 mL	355618	05/05/21 11:43	KHM	TAL PIT
Total/NA	Analysis Instrumen	EPA 245.1 Rev. t ID: HGY		1			355935	05/06/21 10:49	KHM	TAL PIT
Total/NA	Prep	SM 4500 CN C			6 mL	6 mL	354482	04/24/21 18:00	GRB	TAL PIT
Total/NA	Analysis Instrumen	SM 4500CN E t ID: SEAL2		1			354706	04/26/21 20:14	CMR	TAL PIT

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-120179-2 Date Collected: 04/16/21 00:00 **Matrix: Water**

Date Received: 04/17/21 10:30

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	354671	04/27/21 18:28	SW1	TAL PIT
	Instrumer	nt ID: CHHP5								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BJT = Bill Trout

GRB = Gabriel Berghe

KHM = Kyle Mucroski

TLP = Tara Peterson Batch Type: Analysis

CMR = Carl Reagle

DLF = Donald Ferguson

KHM = Kyle Mucroski RJR = Ron Rosenbaum

SW1 = Sunan Wang-un

VVP = Vincent Piccolino

Eurofins TestAmerica, Pittsburgh

5/10/2021

Page 9 of 32

Job ID: 180-120179-1

Client: ARCADIS U.S. Inc Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Date Collected: 04/16/21 12:50 Date Received: 04/17/21 10:30

Lab Sample ID: 180-120179-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 19:21	1
1,1,2,2-Tetrachloroethane	ND	*-	1.0	0.60	ug/L			04/27/21 19:21	1
1,1,2-Trichloroethane	6.1	*_	1.0	0.45	ug/L			04/27/21 19:21	1
1,1-Dichloroethane	1.4		1.0	0.31	ug/L			04/27/21 19:21	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 19:21	1
1,2-Dichloroethane	1300	E *-	1.0	0.57	ug/L			04/27/21 19:21	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 19:21	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 19:21	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 19:21	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 19:21	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 19:21	1
Acrolein	ND	*_	20	16	ug/L			04/27/21 19:21	1
Acrylonitrile	ND	*_	20	7.8	ug/L			04/27/21 19:21	1
Benzene	ND		1.0	0.60	ug/L			04/27/21 19:21	1
Bromoform	ND	*_	1.0	0.98	ug/L			04/27/21 19:21	1
Bromomethane	ND		1.0	0.89	ug/L			04/27/21 19:21	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 19:21	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 19:21	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 19:21	1
Chloroform	ND		1.0	0.60	ug/L			04/27/21 19:21	1
Chloromethane	ND		1.0	0.90	ug/L			04/27/21 19:21	1
cis-1,2-Dichloroethene	8.7		1.0	0.71	ug/L			04/27/21 19:21	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 19:21	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 19:21	1
Methylene Chloride	2200	E *-	1.0	0.89	ug/L			04/27/21 19:21	1
Tetrachloroethene	0.62	J	1.0	0.47	ug/L			04/27/21 19:21	1
Toluene	0.65	J	1.0	0.46	ug/L			04/27/21 19:21	1
trans-1,2-Dichloroethene	2.2		1.0	0.67	ug/L			04/27/21 19:21	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 19:21	1
Trichloroethene	4.3		1.0	0.69	ug/L			04/27/21 19:21	1
Vinyl chloride	40		1.0	0.40	ug/L			04/27/21 19:21	1
Dibromochloromethane	ND	*_	1.0	0.84	ug/L			04/27/21 19:21	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 19:21	1
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١	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	51		42 - 142		04/27/21 19:21	1
	4-Bromofluorobenzene (Surr)	81		54 - 114		04/27/21 19:21	1
	Toluene-d8 (Surr)	98		61 - 125		04/27/21 19:21	1
	Dibromofluoromethane (Surr)	77		60 - 150		04/27/21 19:21	1

Method: EPA 624 - Volatile	Organic (Compounds ((GC/MS)	- RADL
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Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND *-	200	120	ug/L			04/30/21 19:12	200
1,1,2,2-Tetrachloroethane	ND	200	120	ug/L			04/30/21 19:12	200
1,1,2-Trichloroethane	ND	200	91	ug/L			04/30/21 19:12	200
1,1-Dichloroethane	ND	200	61	ug/L			04/30/21 19:12	200
1,1-Dichloroethene	ND	200	110	ug/L			04/30/21 19:12	200
1,2-Dichloroethane	4700	200	110	ug/L			04/30/21 19:12	200
1,2-Dichloropropane	ND	200	130	ug/L			04/30/21 19:12	200
1,2-Dichlorobenzene	ND	200	73	ug/L			04/30/21 19:12	200

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Page 10 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Dibromofluoromethane (Surr)

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1 Date Collected: 04/16/21 12:50

Matrix: Water Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		200	100	ug/L			04/30/21 19:12	200
1,4-Dichlorobenzene	ND		200	110	ug/L			04/30/21 19:12	200
2-Chloroethyl vinyl ether	ND		400	340	ug/L			04/30/21 19:12	200
Acrolein	ND		4000	3200	ug/L			04/30/21 19:12	200
Acrylonitrile	ND		4000	1600	ug/L			04/30/21 19:12	200
Benzene	ND		200	120	ug/L			04/30/21 19:12	200
Bromoform	ND		200	200	ug/L			04/30/21 19:12	200
Bromomethane	ND		200	180	ug/L			04/30/21 19:12	200
Carbon disulfide	ND		200	180	ug/L			04/30/21 19:12	200
Carbon tetrachloride	ND	*_	200	180	ug/L			04/30/21 19:12	200
Chlorobenzene	ND		200	100	ug/L			04/30/21 19:12	200
Chloroform	ND		200	120	ug/L			04/30/21 19:12	200
Chloromethane	ND		200	180	ug/L			04/30/21 19:12	200
cis-1,2-Dichloroethene	ND		200	140	ug/L			04/30/21 19:12	200
cis-1,3-Dichloropropene	ND		200	120	ug/L			04/30/21 19:12	200
Ethylbenzene	ND		200	100	ug/L			04/30/21 19:12	200
Methylene Chloride	5900		200	180	ug/L			04/30/21 19:12	200
Tetrachloroethene	ND		200	93	ug/L			04/30/21 19:12	200
Toluene	ND		200	91	ug/L			04/30/21 19:12	200
trans-1,2-Dichloroethene	ND		200	130	ug/L			04/30/21 19:12	200
trans-1,3-Dichloropropene	ND		200	120	ug/L			04/30/21 19:12	200
Trichloroethene	ND		200	140	ug/L			04/30/21 19:12	200
Vinyl chloride	ND		200	80	ug/L			04/30/21 19:12	200
Dibromochloromethane	ND		200	170	ug/L			04/30/21 19:12	200
Dichlorobromomethane	ND		200	130	ug/L			04/30/21 19:12	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		42 - 142					04/30/21 19:12	200
4-Bromofluorobenzene (Surr)	83		54 - 114					04/30/21 19:12	200
Toluene-d8 (Surr)	81		61 - 125					04/30/21 19:12	200
5" " " " " " " " " " " " " " " " " " "								04/00/04 40 40	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.8	0.61	ug/L		04/19/21 11:23	04/23/21 23:52	1
Acenaphthylene	ND		1.8	0.61	ug/L		04/19/21 11:23	04/23/21 23:52	1
Anthracene	ND		1.8	0.46	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzidine	ND	F1	190	86	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[a]anthracene	ND		1.8	0.71	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[a]pyrene	ND		1.8	0.50	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[b]fluoranthene	ND		1.8	0.92	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[g,h,i]perylene	ND		1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[k]fluoranthene	ND		1.8	0.83	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-chloroethoxy)methane	ND		9.4	0.63	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-chloroethyl)ether	ND		1.8	0.38	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-ethylhexyl) phthalate	ND		94	59	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Bromophenyl phenyl ether	ND		9.4	0.59	ug/L		04/19/21 11:23	04/23/21 23:52	1
Butyl benzyl phthalate	ND		9.4	4.4	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Chloro-3-methylphenol	ND		9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
2-Chloronaphthalene	ND		1.8	0.56	ug/L		04/19/21 11:23	04/23/21 23:52	1

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92

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04/30/21 19:12

Page 11 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1

Date Collected: 04/16/21 12:50 Matrix: Water Date Received: 04/17/21 10:30

Analyte	Result Qualit	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	ND ND	9.4	0.60	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Chlorophenyl phenyl ether	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
Chrysene	ND	1.8	0.76	ug/L		04/19/21 11:23	04/23/21 23:52	1
Dibenzo(a,h)-anthracene	ND	1.8	0.68	ug/L		04/19/21 11:23	04/23/21 23:52	1
3,3'-Dichlorobenzidine	ND	9.4	5.5	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dichlorophenol	ND	1.8	0.48	ug/L		04/19/21 11:23	04/23/21 23:52	1
Diethyl phthalate	ND	9.4	5.3	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dimethylphenol	ND	9.4	0.39	ug/L		04/19/21 11:23	04/23/21 23:52	1
Dimethyl phthalate	ND	9.4	0.53	ug/L		04/19/21 11:23	04/23/21 23:52	1
Di-n-butyl phthalate	ND	9.4	7.0	ug/L		04/19/21 11:23	04/23/21 23:52	1
4,6-Dinitro-2-methylphenol	ND	47	14	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dinitrophenol	ND	94	14	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dinitrotoluene	ND	9.4	0.48	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,6-Dinitrotoluene	ND	9.4	0.57	ug/L		04/19/21 11:23	04/23/21 23:52	1
Di-n-octyl phthalate	ND	9.4	6.5	ug/L		04/19/21 11:23	04/23/21 23:52	1
1,2-Diphenylhydrazine(as Azobenzene)	ND	9.4	0.46	ug/L		04/19/21 11:23	04/23/21 23:52	1
Fluoranthene	ND	1.8	0.57	ug/L		04/19/21 11:23	04/23/21 23:52	1
Fluorene	ND	1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorobenzene	ND	1.8	0.53	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorobutadiene	ND	1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorocyclopentadiene	ND	9.4	4.7	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachloroethane	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
Indeno[1,2,3-cd]pyrene	ND	1.8	0.80	ug/L		04/19/21 11:23	04/23/21 23:52	1
Isophorone	ND	9.4	0.51	ug/L		04/19/21 11:23	04/23/21 23:52	1
Naphthalene	ND	1.8	0.56	ug/L		04/19/21 11:23	04/23/21 23:52	1
Nitrobenzene	ND	19	4.7	ug/L		04/19/21 11:23	04/23/21 23:52	1
2-Nitrophenol	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Nitrophenol	ND	47	1.3	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodimethylamine	ND	9.4	0.63	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodi-n-propylamine	ND	1.8	0.67	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodiphenylamine	ND	9.4	1.1	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,2'-oxybis[1-chloropropane]	ND	1.8	0.55	ug/L		04/19/21 11:23	04/23/21 23:52	1
Pentachlorophenol	ND	47	8.0	ug/L		04/19/21 11:23	04/23/21 23:52	1
Phenanthrene	ND	1.8	0.52	ug/L		04/19/21 11:23	04/23/21 23:52	1
Phenol	ND	9.4	4.6	ug/L		04/19/21 11:23	04/23/21 23:52	1
Pyrene	ND	1.8	0.51	ug/L		04/19/21 11:23	04/23/21 23:52	1
1,2,4-Trichlorobenzene	ND	9.4	0.49	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4,6-Trichlorophenol	ND	9.4	0.64	ug/L		04/19/21 11:23	04/23/21 23:52	1
Surrogate	%Recovery Quality	fier Limits				Prepared	Analyzed	Dil Fac
2 Fluorobinhamul						04/10/21 11:22	04/22/21 22:52	

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	66		50 - 105	04/19/21 11:23	04/23/21 23:52	1
2-Fluorophenol	66		42 - 106	04/19/21 11:23	04/23/21 23:52	1
Nitrobenzene-d5	60		53 - 105	04/19/21 11:23	04/23/21 23:52	1
Phenol-d5	59		43 - 105	04/19/21 11:23	04/23/21 23:52	1
Terphenyl-d14	74		31 - 111	04/19/21 11:23	04/23/21 23:52	1
2 4 6-Tribromonhenol	46		29 - 122	04/19/21 11:23	04/23/21 23:52	1

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Date Collected: 04/16/21 12:50

Date Received: 04/17/21 10:30

Lab Sample ID: 180-120179-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		5.0	0.83	ug/L		04/30/21 08:48	05/03/21 15:47	1
Arsenic	13		10	6.4	ug/L		04/30/21 08:48	05/03/21 15:47	1
Cadmium	ND		5.0	0.30	ug/L		04/30/21 08:48	05/03/21 15:47	1
Chromium	13		5.0	0.71	ug/L		04/30/21 08:48	05/03/21 15:47	1
Copper	ND		25	4.1	ug/L		04/30/21 08:48	05/03/21 15:47	1
Lead	3.5	J	10	2.8	ug/L		04/30/21 08:48	05/03/21 15:47	1
Nickel	20	J	40	1.6	ug/L		04/30/21 08:48	05/03/21 15:47	1
Zinc	96		20	19	ug/L		04/30/21 08:48	05/03/21 15:47	1

Method: EPA 245.1 Rev. - Mercury (CVAA)

Analyte RL Analyzed Result Qualifier MDL Unit **Prepared** Dil Fac 05/05/21 11:43 05/06/21 10:49 Mercury ND 0.20 0.13 ug/L

General Chemistry

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Cyanide, Total ND 0.010 0.0080 mg/L 04/24/21 18:00 04/26/21 20:14

Lab Sample ID: 180-120179-2 Client Sample ID: TRIP BLANK **Matrix: Water**

Date Collected: 04/16/21 00:00 Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 18:28	1
1,1,2,2-Tetrachloroethane	ND	*-	1.0	0.60	ug/L			04/27/21 18:28	1
1,1,2-Trichloroethane	ND	*-	1.0	0.45	ug/L			04/27/21 18:28	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/27/21 18:28	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 18:28	1
1,2-Dichloroethane	ND	*-	1.0	0.57	ug/L			04/27/21 18:28	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 18:28	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 18:28	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 18:28	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 18:28	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 18:28	1
Acrolein	ND	*-	20	16	ug/L			04/27/21 18:28	1
Acrylonitrile	ND	*_	20	7.8	ug/L			04/27/21 18:28	1
Benzene	ND		1.0	0.60	ug/L			04/27/21 18:28	1
Bromoform	ND	*-	1.0	0.98	ug/L			04/27/21 18:28	1
Bromomethane	ND		1.0	0.89	ug/L			04/27/21 18:28	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 18:28	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 18:28	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 18:28	1
Chloroform	ND		1.0	0.60	ug/L			04/27/21 18:28	1
Chloromethane	ND		1.0	0.90	ug/L			04/27/21 18:28	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/27/21 18:28	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 18:28	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 18:28	1
Methylene Chloride	ND	*_	1.0	0.89	ug/L			04/27/21 18:28	1
Tetrachloroethene	ND		1.0	0.47	ug/L			04/27/21 18:28	1
Toluene	ND		1.0		ug/L			04/27/21 18:28	1

Eurofins TestAmerica, Pittsburgh

Page 13 of 32

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-120179-2

Date Collected: 04/16/21 00:00 **Matrix: Water** Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/27/21 18:28	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 18:28	1
Trichloroethene	ND		1.0	0.69	ug/L			04/27/21 18:28	1
Vinyl chloride	ND		1.0	0.40	ug/L			04/27/21 18:28	1
Dibromochloromethane	ND	*_	1.0	0.84	ug/L			04/27/21 18:28	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	59		42 - 142					04/27/21 18:28	1
4-Bromofluorobenzene (Surr)	78		54 - 114					04/27/21 18:28	1
Toluene-d8 (Surr)	91		61 - 125					04/27/21 18:28	1
Dibromofluoromethane (Surr)	84		60 - 150					04/27/21 18:28	1

Client: ARCADIS U.S. Inc

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-354671/6

Matrix: Water

Analysis Batch: 354671

Client Sample ID: Method Blank

Prep Type: Total/NA

1,1,1-Trichloroethane ND 1,0 0.60 ug/L 04/27/21 10:48 1,1,2,2-Teitachloroethane ND 1,0 0.60 ug/L 04/27/21 10:48 1,1,2-Trichloroethane ND 1,0 0.45 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1,0 0.55 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1,0 0.55 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.50 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.50 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.50 ug/L	, , , , , , , , , , , , , , , , , , , ,	MB	MB							
1,1,2,2-Tetrachloroethane ND 1.0 0.60 ug/L 04/27/21 10.48 1,1,2-Tirchloroethane ND 1.0 0.45 ug/L 04/27/21 10.48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10.48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10.48 1,2-Dichloroperbane ND 1.0 0.66 ug/L 04/27/21 10.48 1,2-Dichlorobenzene ND 1.0 0.66 ug/L 04/27/21 10.48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 4,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 Acrolein ND 1.0 0.60 ug/L 04/	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane ND 1.0 0.45 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1.0 0.31 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.56 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.36 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 2.0 1.7 ug/L 04/27/21 10:48 Berzene ND 1.0 0.60 ug/L 04/27/21 10:48 <td>1,1,1-Trichloroethane</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.60</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 10:48	1
1,1-Dichloroethane ND 1.0 0.31 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.56 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.56 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 1.0 0.8 ug/L	1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			04/27/21 10:48	1
1,1-Dichloroethene ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropenae ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 1.6 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Berzene ND 1.0 0.89 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Car	1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			04/27/21 10:48	1
1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Acrolein ND 1.0 0.60 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Ch	1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/27/21 10:48	1
1,2-Dichloropropane ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.36 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrolonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoftane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 <	1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 10:48	1
1,2-Dichlorobenzene ND 1.0 0.36 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.89 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.50 ug/L 04/27/21 10:48 Chlorobenzen	1,2-Dichloroethane	ND		1.0	0.57	ug/L			04/27/21 10:48	1
1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoformethane ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoformethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chlor	1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 10:48	1
1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrolonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroptopene ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloro	1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 10:48	1
2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.88 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chlorodethene ND 1.0 0.50 ug/L 04/27/21 10:48 Ethylbenzene	1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 10:48	1
Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloropthene ND 1.0 0.91 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.59 ug/L 04/27/21 10:48 Ettrachloroethene	1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 10:48	1
Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.88 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloroethene ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0	2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 10:48	1
Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.51 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.89 ug/L 04/27/21 10:48 Tetra	Acrolein	ND		20	16	ug/L			04/27/21 10:48	1
Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Toluene ND 1.0 0.47 ug/L 04/27/21 10:48	Acrylonitrile	ND		20	7.8	ug/L			04/27/21 10:48	1
Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene	Benzene	ND		1.0	0.60	ug/L			04/27/21 10:48	1
Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene	Bromoform	ND		1.0	0.98	ug/L			04/27/21 10:48	1
Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48	Bromomethane	ND		1.0	0.89	ug/L			04/27/21 10:48	1
Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.58 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane	Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 10:48	1
Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 </td <td>Carbon tetrachloride</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.88</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 10:48	1
Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.40 ug/L 04/27/21 10:48 </td <td>Chlorobenzene</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.50</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 10:48	1
cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Chloroform	ND		1.0	0.60	ug/L			04/27/21 10:48	1
cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Chloromethane	ND		1.0	0.90	ug/L			04/27/21 10:48	1
Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/27/21 10:48	1
Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 10:48	1
Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 10:48	1
Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Methylene Chloride	ND		1.0	0.89	ug/L			04/27/21 10:48	1
trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Tetrachloroethene	ND		1.0	0.47	ug/L			04/27/21 10:48	1
trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Toluene	ND		1.0	0.46	ug/L			04/27/21 10:48	1
Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/27/21 10:48	1
Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 10:48	1
Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Trichloroethene	ND		1.0	0.69	ug/L			04/27/21 10:48	1
	Vinyl chloride	ND		1.0	0.40	ug/L			04/27/21 10:48	1
Dichlorobromomethane ND 1.0 0.64 ug/L 04/27/21 10:48	Dibromochloromethane	ND		1.0	0.84	ug/L			04/27/21 10:48	1
	Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 10:48	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	46		42 - 142		04/27/21 10:48	1
4-Bromofluorobenzene (Surr)	89		54 - 114		04/27/21 10:48	1
Toluene-d8 (Surr)	114		61 - 125		04/27/21 10:48	1
Dibromofluoromethane (Surr)	77		60 - 150		04/27/21 10:48	1

Lab Sample ID: LCS 180-354671/1004

Matrix: Water

Analysis Batch: 354671

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	9.05		ug/L		91	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	4.67	*-	ug/L		47	60 - 140	
1,1,2-Trichloroethane	10.0	5.89	*-	ug/L		59	71 - 129	

Eurofins TestAmerica, Pittsburgh

Prep Type: Total/NA

5/10/2021

Client Sample ID: Lab Control Sample

Page 15 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-354671/1004

Matrix: Water

Analysis Batch: 354671

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethane	10.0	8.65		ug/L		86	73 - 127	
1,1-Dichloroethene	10.0	7.34		ug/L		73	50 - 150	
1,2-Dichloroethane	10.0	6.10	*_	ug/L		61	70 - 130	
1,2-Dichloropropane	10.0	8.65		ug/L		87	35 - 150	
1,2-Dichlorobenzene	10.0	8.64		ug/L		86	65 - 135	
1,3-Dichlorobenzene	10.0	9.57		ug/L		96	73 - 127	
1,4-Dichlorobenzene	10.0	9.40		ug/L		94	65 - 135	
2-Chloroethyl vinyl ether	20.0	10.3		ug/L		52	10 - 150	
Acrolein	30.0	ND	*_	ug/L		26	60 - 140	
Acrylonitrile	100	30.5	*_	ug/L		31	60 - 140	
Benzene	10.0	9.15		ug/L		91	65 - 135	
Bromoform	10.0	5.40	*_	ug/L		54	71 - 129	
Bromomethane	10.0	8.80		ug/L		88	15 - 150	
Carbon disulfide	10.0	8.25		ug/L		83	44 - 150	
Carbon tetrachloride	10.0	8.36		ug/L		84	73 - 127	
Chlorobenzene	10.0	9.72		ug/L		97	66 - 134	
Chloroform	10.0	8.48		ug/L		85	70 - 135	
Chloromethane	10.0	9.63		ug/L		96	10 - 150	
cis-1,2-Dichloroethene	10.0	8.25		ug/L		83	39 - 150	
cis-1,3-Dichloropropene	10.0	9.63		ug/L		96	25 - 150	
Ethylbenzene	10.0	11.7		ug/L		117	60 - 140	
Methylene Chloride	10.0	5.60	*_	ug/L		56	60 - 140	

10.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

9.32

10.2

8.17

8.02

9.54

8.82

8.01

6.38 *-

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	63		42 - 142
4-Bromofluorobenzene (Surr)	101		54 - 114
Toluene-d8 (Surr)	98		61 - 125
Dibromofluoromethane (Surr)	83		60 - 150

Lab Sample ID: 180-120179-1 DU

Matrix: Water

Tetrachloroethene

Trichloroethene

Vinyl chloride

trans-1,2-Dichloroethene

Dibromochloromethane

Dichlorobromomethane

trans-1,3-Dichloropropene

Toluene

Analysis Batch: 354671

Client Sample ID:	POTW OUTFALL	(041621)
	Pron Type:	Total/NA

74 - 126

75 - 125

70 - 130

50 - 150

67 - 133

10 - 150

70 - 135

65 - 135

93

102

82

80

95

88

64

80

Prep Type: Total/NA

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
1,1,1-Trichloroethane	ND		ND		ug/L		NC	19
1,1,2,2-Tetrachloroethane	ND	*_	ND	*_	ug/L		NC	34
1,1,2-Trichloroethane	6.1	*_	7.79	*- F3	ug/L		24	20
1,1-Dichloroethane	1.4		1.54		ug/L		13	19
1,1-Dichloroethene	ND		ND		ug/L		NC	25
1,2-Dichloroethane	1300	E *-	1700	E *-	ug/L		24	24

Eurofins TestAmerica, Pittsburgh

Page 16 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-120179-1 DU

Matrix: Water

Analysis Batch: 354671

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA

-	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
1,2-Dichloropropane	ND		ND		ug/L		NC	21
1,2-Dichlorobenzene	ND		ND		ug/L		NC	16
1,3-Dichlorobenzene	ND		ND		ug/L		NC	16
1,4-Dichlorobenzene	ND		ND		ug/L		NC	15
2-Chloroethyl vinyl ether	ND		1.95	J	ug/L		NC	35
Acrolein	ND	*_	ND	*-	ug/L		NC	34
Acrylonitrile	ND	*_	ND	*_	ug/L		NC	28
Benzene	ND		ND		ug/L		NC	18
Bromoform	ND	*_	ND	*-	ug/L		NC	23
Bromomethane	ND		ND		ug/L		NC	27
Carbon disulfide	ND		ND		ug/L		NC	18
Carbon tetrachloride	ND		ND		ug/L		NC	23
Chlorobenzene	ND		ND		ug/L		NC	17
Chloroform	ND		ND		ug/L		NC	22
Chloromethane	ND		ND		ug/L		NC	24
cis-1,2-Dichloroethene	8.7		10.1		ug/L		15	19
cis-1,3-Dichloropropene	ND		ND		ug/L		NC	28
Ethylbenzene	ND		ND		ug/L		NC	17
Methylene Chloride	2200	E *-	2700	E *-	ug/L		20	23
Tetrachloroethene	0.62	J	0.645	J	ug/L		4	23
Toluene	0.65	J	0.710	J	ug/L		8	16
trans-1,2-Dichloroethene	2.2		2.48		ug/L		11	17
trans-1,3-Dichloropropene	ND		ND		ug/L		NC	27
Trichloroethene	4.3		4.80		ug/L		11	18
Vinyl chloride	40		42.3		ug/L		5	26
Dibromochloromethane	ND	*_	ND	*_	ug/L		NC	20
Dichlorobromomethane	ND		ND		ug/L		NC	23

DU DU

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	50		42 - 142
4-Bromofluorobenzene (Surr)	81		54 - 114
Toluene-d8 (Surr)	95		61 - 125
Dibromofluoromethane (Surr)	76		60 - 150

Lab Sample ID: MB 180-355217/6

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Method Blank Prep Type: Total/NA

	MB	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/30/21 13:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			04/30/21 13:23	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			04/30/21 13:23	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/30/21 13:23	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/30/21 13:23	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			04/30/21 13:23	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/30/21 13:23	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/30/21 13:23	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/30/21 13:23	1
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Page 17 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

MB MB

Lab Sample ID: MB 180-355217/6

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Method Blank

Prep Type: Total/NA

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/30/21 13:23	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/30/21 13:23	1
Acrolein	ND		20	16	ug/L			04/30/21 13:23	1
Acrylonitrile	ND		20	7.8	ug/L			04/30/21 13:23	1
Benzene	ND		1.0	0.60	ug/L			04/30/21 13:23	1
Bromoform	ND		1.0	0.98	ug/L			04/30/21 13:23	1
Bromomethane	ND		1.0	0.89	ug/L			04/30/21 13:23	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/30/21 13:23	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/30/21 13:23	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/30/21 13:23	1
Chloroform	ND		1.0	0.60	ug/L			04/30/21 13:23	1
Chloromethane	ND		1.0	0.90	ug/L			04/30/21 13:23	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/30/21 13:23	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/30/21 13:23	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/30/21 13:23	1
Methylene Chloride	ND		1.0	0.89	ug/L			04/30/21 13:23	1
Tetrachloroethene	ND		1.0	0.47	ug/L			04/30/21 13:23	1
Toluene	ND		1.0	0.46	ug/L			04/30/21 13:23	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/30/21 13:23	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/30/21 13:23	1
Trichloroethene	ND		1.0	0.69	ug/L			04/30/21 13:23	1
Vinyl chloride	ND		1.0	0.40	ug/L			04/30/21 13:23	1
Dibromochloromethane	ND		1.0	0.84	ug/L			04/30/21 13:23	1
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ИΒ	ΜВ

ND

Surrogate	%Recovery	Qualifier	Limits	Prepa	red An	alyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	89		42 - 142		04/30	/21 13:23	1	
4-Bromofluorobenzene (Surr)	86		54 - 114		04/30	/21 13:23	1	
Toluene-d8 (Surr)	82		61 - 125		04/30	/21 13:23	1	
Dibromofluoromethane (Surr)	94		60 - 150		04/30	/21 13:23	1	

1.0

0.64 ug/L

Lab Sample ID: LCS 180-355217/1002

Matrix: Water

Dichlorobromomethane

Analysis Batch: 355217

Client Sample ID: Lab Control Sample Prep Type: Total/NA

04/30/21 13:23

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	7.01	*_	ug/L		70	75 - 125
1,1,2,2-Tetrachloroethane	10.0	10.6		ug/L		106	60 - 140
1,1,2-Trichloroethane	10.0	8.21		ug/L		82	71 - 129
1,1-Dichloroethane	10.0	8.16		ug/L		82	73 - 127
1,1-Dichloroethene	10.0	8.46		ug/L		85	50 - 150
1,2-Dichloroethane	10.0	8.62		ug/L		86	70 - 130
1,2-Dichloropropane	10.0	8.90		ug/L		89	35 - 150
1,2-Dichlorobenzene	10.0	9.24		ug/L		92	65 - 135
1,3-Dichlorobenzene	10.0	8.85		ug/L		89	73 - 127
1,4-Dichlorobenzene	10.0	9.00		ug/L		90	65 - 135
2-Chloroethyl vinyl ether	20.0	19.6		ug/L		98	10 - 150
Acrolein	30.0	25.0		ug/L		83	60 - 140

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Page 18 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-355217/1002

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

7 maryolo Batom 000211	Spike	LCS	LCS				%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Acrylonitrile		84.5		ug/L		84	60 - 140
Benzene	10.0	8.89		ug/L		89	65 - 135
Bromoform	10.0	10.7		ug/L		107	71 - 129
Bromomethane	10.0	7.98		ug/L		80	15 - 150
Carbon disulfide	10.0	6.93		ug/L		69	44 - 150
Carbon tetrachloride	10.0	6.28	*_	ug/L		63	73 - 127
Chlorobenzene	10.0	9.35		ug/L		93	66 - 134
Chloroform	10.0	8.71		ug/L		87	70 - 135
Chloromethane	10.0	12.4		ug/L		124	10 - 150
cis-1,2-Dichloroethene	10.0	8.57		ug/L		86	39 - 150
cis-1,3-Dichloropropene	10.0	11.4		ug/L		114	25 - 150
Ethylbenzene	10.0	10.5		ug/L		105	60 - 140
Methylene Chloride	10.0	7.73		ug/L		77	60 - 140
Tetrachloroethene	10.0	8.45		ug/L		85	74 - 126
Toluene	10.0	8.80		ug/L		88	75 - 125
trans-1,2-Dichloroethene	10.0	8.10		ug/L		81	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150
Trichloroethene	10.0	9.07		ug/L		91	67 - 133
Vinyl chloride	10.0	10.9		ug/L		109	10 - 150
Dibromochloromethane	10.0	8.60		ug/L		86	70 - 135
Dichlorobromomethane	10.0	8.83		ug/L		88	65 - 135

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		42 - 142
4-Bromofluorobenzene (Surr)	99		54 - 114
Toluene-d8 (Surr)	87		61 - 125
Dibromofluoromethane (Surr)	82		60 - 150

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 353647

_	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.9	0.65	ug/L		04/19/21 11:23	04/23/21 23:26	1
Acenaphthylene	ND		1.9	0.65	ug/L		04/19/21 11:23	04/23/21 23:26	1
Anthracene	ND		1.9	0.49	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzidine	ND		200	91	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[a]anthracene	ND		1.9	0.75	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[a]pyrene	ND		1.9	0.53	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[b]fluoranthene	ND		1.9	0.97	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[g,h,i]perylene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[k]fluoranthene	ND		1.9	0.88	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-chloroethoxy)methane	ND		10	0.67	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-chloroethyl)ether	ND		1.9	0.40	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-ethylhexyl) phthalate	ND		100	62	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Bromophenyl phenyl ether	ND		10	0.63	ug/L		04/19/21 11:23	04/23/21 23:26	1
Butyl benzyl phthalate	ND		10	4.6	ug/L		04/19/21 11:23	04/23/21 23:26	1

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Page 19 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Surrogate

Terphenyl-d14

Analysis Batch: 354322

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 353647**

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Chloronaphthalene	ND		1.9	0.59	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Chlorophenol	ND		10	0.64	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Chlorophenyl phenyl ether	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
Chrysene	ND		1.9	0.81	ug/L		04/19/21 11:23	04/23/21 23:26	1
Dibenzo(a,h)-anthracene	ND		1.9	0.72	ug/L		04/19/21 11:23	04/23/21 23:26	1
3,3'-Dichlorobenzidine	ND		10	5.8	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dichlorophenol	ND		1.9	0.51	ug/L		04/19/21 11:23	04/23/21 23:26	1
Diethyl phthalate	ND		10	5.7	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dimethylphenol	ND		10	0.41	ug/L		04/19/21 11:23	04/23/21 23:26	1
Dimethyl phthalate	ND		10	0.56	ug/L		04/19/21 11:23	04/23/21 23:26	1
Di-n-butyl phthalate	ND		10	7.4	ug/L		04/19/21 11:23	04/23/21 23:26	1
4,6-Dinitro-2-methylphenol	ND		50	15	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dinitrophenol	ND		100	15	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dinitrotoluene	ND		10	0.51	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,6-Dinitrotoluene	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
Di-n-octyl phthalate	ND		10	6.9	ug/L		04/19/21 11:23	04/23/21 23:26	1
1,2-Diphenylhydrazine(as	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
Azobenzene)					Ü				
Fluoranthene	ND		1.9	0.60	ug/L		04/19/21 11:23	04/23/21 23:26	1
Fluorene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorobenzene	ND		1.9	0.56	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorobutadiene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorocyclopentadiene	ND		10	5.0	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachloroethane	ND		10	0.62	ug/L		04/19/21 11:23	04/23/21 23:26	1
Indeno[1,2,3-cd]pyrene	ND		1.9	0.85	ug/L		04/19/21 11:23	04/23/21 23:26	1
Isophorone	ND		10	0.54	ug/L		04/19/21 11:23	04/23/21 23:26	1
Naphthalene	ND		1.9	0.59	ug/L		04/19/21 11:23	04/23/21 23:26	1
Nitrobenzene	ND		20	5.0	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Nitrophenol	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Nitrophenol	ND		50	1.4	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodimethylamine	ND		10	0.67	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodi-n-propylamine	ND		1.9	0.71	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodiphenylamine	ND		10	1.2	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,2'-oxybis[1-chloropropane]	ND		1.9	0.58	ug/L		04/19/21 11:23	04/23/21 23:26	1
Pentachlorophenol	ND		50	8.5	ug/L		04/19/21 11:23	04/23/21 23:26	1
Phenanthrene	ND		1.9	0.55	ug/L		04/19/21 11:23	04/23/21 23:26	1
Phenol	ND		10	4.9	ug/L		04/19/21 11:23	04/23/21 23:26	1
Pyrene	ND		1.9		ug/L		04/19/21 11:23	04/23/21 23:26	1
1,2,4-Trichlorobenzene	ND		10		ug/L			04/23/21 23:26	1
2,4,6-Trichlorophenol	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
	MB								

2-Fluorobiphenyl 82 50 - 105 04/19/21 11:23 04/23/21 23:26 2-Fluorophenol 86 42 - 106 04/19/21 11:23 04/23/21 23:26 Nitrobenzene-d5 85 53 - 105 04/19/21 11:23 04/23/21 23:26 Phenol-d5 82 43 - 105 04/19/21 11:23 04/23/21 23:26

Limits

31 - 111

%Recovery

78

Qualifier

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04/19/21 11:23 04/23/21 23:26

Analyzed

Prepared

Dil Fac

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 353647

MB MB

Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed 2,4,6-Tribromophenol 04/19/21 11:23 04/23/21 23:26 50 29 - 122

Lab Sample ID: LCS 180-353647/2-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 353647

Amaryolo Batolii 004022	Spike	LCS	LCS				%Rec.	
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	100	69.7		ug/L		70	47 - 145	
Acenaphthylene	100	70.6		ug/L		71	33 - 145	
Anthracene	100	69.6		ug/L		70	27 - 133	
Benzidine	100	ND		ug/L		24	5 - 100	
Benzo[a]anthracene	100	72.3		ug/L		72	33 - 143	
Benzo[a]pyrene	100	70.5		ug/L		70	17 - 150	
Benzo[b]fluoranthene	100	65.8		ug/L		66	24 - 150	
Benzo[g,h,i]perylene	100	78.3		ug/L		78	10 - 150	
Benzo[k]fluoranthene	100	64.8		ug/L		65	11 - 150	
Bis(2-chloroethoxy)methane	100	71.8		ug/L		72	33 - 150	
Bis(2-chloroethyl)ether	100	71.2		ug/L		71	12 - 150	
Bis(2-ethylhexyl) phthalate	100	76.2	J	ug/L		76	10 - 150	
4-Bromophenyl phenyl ether	100	73.0		ug/L		73	53 - 127	
Butyl benzyl phthalate	100	77.0		ug/L		77	10 - 150	
4-Chloro-3-methylphenol	100	69.6		ug/L		70	22 - 147	
2-Chloronaphthalene	100	69.7		ug/L		70	60 - 120	
2-Chlorophenol	100	73.4		ug/L		73	23 - 134	
4-Chlorophenyl phenyl ether	100	73.6		ug/L		74	25 - 150	
Chrysene	100	69.4		ug/L		69	17 - 150	
Dibenzo(a,h)-anthracene	100	78.2		ug/L		78	10 - 150	
3,3'-Dichlorobenzidine	100	70.5		ug/L		70	10 - 150	
2,4-Dichlorophenol	100	58.0		ug/L		58	39 - 135	
Diethyl phthalate	100	75.2		ug/L		75	10 - 120	
2,4-Dimethylphenol	100	71.1		ug/L		71	32 - 120	
Dimethyl phthalate	100	72.8		ug/L		73	10 - 120	
Di-n-butyl phthalate	100	71.6		ug/L		72	10 - 120	
4,6-Dinitro-2-methylphenol	200	121		ug/L		60	10 - 150	
2,4-Dinitrophenol	200	97.7	J	ug/L		49	10 - 150	
2,4-Dinitrotoluene	100	79.3		ug/L		79	39 - 139	
2,6-Dinitrotoluene	100	80.8		ug/L		81	50 - 150	
Di-n-octyl phthalate	100	62.3		ug/L		62	10 - 146	
1,2-Diphenylhydrazine(as	100	67.5		ug/L		67	42 - 107	
Azobenzene)				Ü				
Fluoranthene	100	73.0		ug/L		73	26 - 137	
Fluorene	100	71.6		ug/L		72	59 - 121	
Hexachlorobenzene	100	72.4		ug/L		72	10 - 150	
Hexachlorobutadiene	100	75.8		ug/L		76	24 - 120	
Hexachlorocyclopentadiene	100	59.8		ug/L		60	34 - 117	
Hexachloroethane	100	69.8		ug/L		70	40 - 120	
Indeno[1,2,3-cd]pyrene	100	78.4		ug/L		78	10 - 150	
Isophorone	100	77.5		ug/L		77	21 - 150	
Naphthalene	100	71.7		ug/L		72	21 - 133	

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-353647/2-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 353647

Job ID: 180-120179-1

%Rec.

7 , 0.0	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Nitrobenzene		77.2		ug/L		77	35 - 150
2-Nitrophenol	100	86.6		ug/L		87	29 - 150
4-Nitrophenol	200	134		ug/L		67	10 - 132
N-Nitrosodimethylamine	100	77.7		ug/L		78	39 - 125
N-Nitrosodi-n-propylamine	100	73.4		ug/L		73	10 - 150
N-Nitrosodiphenylamine	100	70.7		ug/L		71	48 - 100
2,2'-oxybis[1-chloropropane]	100	85.9		ug/L		86	36 - 150
Pentachlorophenol	200	109		ug/L		54	14 - 150
Phenanthrene	100	66.2		ug/L		66	54 - 120
Phenol	100	75.4		ug/L		75	10 - 120
Pyrene	100	71.9		ug/L		72	52 - 120
1,2,4-Trichlorobenzene	100	72.3		ug/L		72	44 - 142
2,4,6-Trichlorophenol	100	74.7		ug/L		75	37 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	77		50 - 105
2-Fluorophenol	80		42 - 106
Nitrobenzene-d5	80		53 - 105
Phenol-d5	77		43 - 105
Terphenyl-d14	74		31 - 111
2,4,6-Tribromophenol	57		29 - 122

Lab Sample ID: 180-120179-1 MS

Matrix: Water

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA Prep Batch: 353647

Analysis Batch: 354322									Prep Batch: 353647
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthene	ND		94.3	67.5		ug/L		72	47 - 145
Acenaphthylene	ND		94.3	68.0		ug/L		72	33 - 145
Anthracene	ND		94.3	70.2		ug/L		74	27 - 133
Benzidine	ND	F1	94.3	ND	F1	ug/L		0	5 - 100
Benzo[a]anthracene	ND		94.3	72.8		ug/L		77	33 - 143
Benzo[a]pyrene	ND		94.3	72.5		ug/L		77	17 - 150
Benzo[b]fluoranthene	ND		94.3	70.4		ug/L		75	24 - 150
Benzo[g,h,i]perylene	ND		94.3	83.2		ug/L		88	10 - 150
Benzo[k]fluoranthene	ND		94.3	66.6		ug/L		71	11 - 150
Bis(2-chloroethoxy)methane	ND		94.3	67.0		ug/L		71	33 - 150
Bis(2-chloroethyl)ether	ND		94.3	66.3		ug/L		70	12 - 150
Bis(2-ethylhexyl) phthalate	ND		94.3	77.7	J	ug/L		82	10 - 150
4-Bromophenyl phenyl ether	ND		94.3	73.2		ug/L		78	53 - 127
Butyl benzyl phthalate	ND		94.3	75.2		ug/L		80	10 - 150
4-Chloro-3-methylphenol	ND		94.3	69.5		ug/L		74	22 - 147
2-Chloronaphthalene	ND		94.3	66.6		ug/L		71	60 - 120
2-Chlorophenol	ND		94.3	64.5		ug/L		68	23 - 134
4-Chlorophenyl phenyl ether	ND		94.3	70.2		ug/L		74	25 - 150
Chrysene	ND		94.3	71.9		ug/L		76	17 - 150
Dibenzo(a,h)-anthracene	ND		94.3	81.8		ug/L		87	10 - 150
3,3'-Dichlorobenzidine	ND		94.3	74.5		ug/L		79	10 - 150

Eurofins TestAmerica, Pittsburgh

Page 22 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

MS MS

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Sample Sample

Lab Sample ID: 180-120179-1 MS

Matrix: Water

Analysis Batch: 354322

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA

Prep Batch: 353647 %Rec.

5	 	

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,4-Dichlorophenol	ND		94.3	55.9		ug/L		59	39 - 135	
Diethyl phthalate	ND		94.3	61.7		ug/L		65	10 - 120	
2,4-Dimethylphenol	ND		94.3	67.8		ug/L		72	32 - 120	
Dimethyl phthalate	ND		94.3	53.3		ug/L		57	10 - 120	
Di-n-butyl phthalate	ND		94.3	72.8		ug/L		77	10 - 120	
4,6-Dinitro-2-methylphenol	ND		189	82.4		ug/L		44	10 - 150	

Spike

2,4-Dichlorophenol	ND	94.3	55.9	ug/L	59	39 - 135	
Diethyl phthalate	ND	94.3	61.7	ug/L	65	10 - 120	
2,4-Dimethylphenol	ND	94.3	67.8	ug/L	72	32 - 120	
Dimethyl phthalate	ND	94.3	53.3	ug/L	57	10 - 120	
Di-n-butyl phthalate	ND	94.3	72.8	ug/L	77	10 - 120	
4,6-Dinitro-2-methylphenol	ND	189	82.4	ug/L	44	10 - 150	
2,4-Dinitrophenol	ND	189	80.4 J	ug/L	43	10 - 150	
2,4-Dinitrotoluene	ND	94.3	66.2	ug/L	70	39 - 139	
2,6-Dinitrotoluene	ND	94.3	65.8	ug/L	70	50 - 150	
Di-n-octyl phthalate	ND	94.3	64.4	ug/L	68	10 - 146	
1,2-Diphenylhydrazine(as	ND	94.3	69.0	ug/L	73	42 - 107	
Azobenzene)							
Fluoranthene	ND	94.3	74.7	ug/L	79	26 - 137	
Fluorene	ND	94.3	69.7	ug/L	74	59 - 121	
Hexachlorobenzene	ND	94.3	69.9	ug/L	74	10 - 150	
Hexachlorobutadiene	ND	94.3	65.8	ug/L	70	24 - 120	
Hexachlorocyclopentadiene	ND	94.3	38.5	ug/L	41	34 - 117	
Hexachloroethane	ND	94.3	54.3	ug/L	58	40 - 120	
Indeno[1,2,3-cd]pyrene	ND	94.3	82.2	ug/L	87	10 - 150	
Isophorone	ND	94.3	72.2	ug/L	77	21 - 150	
Naphthalene	ND	94.3	65.5	ug/L	69	21 - 133	
Nitrobenzene	ND	94.3	55.9	ug/L	59	35 - 150	
2-Nitrophenol	ND	94.3	50.9	ug/L	54	29 - 150	
4-Nitrophenol	ND	189	117	ug/L	62	10 - 132	
N-Nitrosodimethylamine	ND	94.3	68.6	ug/L	73	39 - 125	
N-Nitrosodi-n-propylamine	ND	94.3	69.2	ug/L	73	10 - 150	
N-Nitrosodiphenylamine	ND	94.3	69.1	ug/L	73	48 - 100	
2,2'-oxybis[1-chloropropane]	ND	94.3	78.3	ug/L	83	36 - 150	
Pentachlorophenol	ND	189	118	ug/L	63	14 - 150	
Phenanthrene	ND	94.3	69.7	ug/L	74	54 - 120	
Phenol	ND	94.3	62.3	ug/L	66	10 - 120	
Pyrene	ND	94.3	72.7	ug/L	77	52 - 120	
1,2,4-Trichlorobenzene	ND	94.3	64.0	ug/L	68	44 - 142	
2,4,6-Trichlorophenol	ND	94.3	71.7	ug/L	76	37 - 144	

•	MC
ა	IVIS

	MS	WS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	73		50 - 105
2-Fluorophenol	71		42 - 106
Nitrobenzene-d5	61		53 - 105
Phenol-d5	67		43 - 105
Terphenyl-d14	74		31 - 111
2,4,6-Tribromophenol	65		29 - 122

Client: ARCADIS U.S. Inc

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 200.7 Rev 4 - Metals (ICP)

Lab Sample ID: MB 180-355176/1-A

Matrix: Water

Analysis Batch: 355531

Client Sample ID: Method Blank **Prep Type: Total Recoverable Prep Batch: 355176**

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		5.0	0.83	ug/L		04/30/21 08:48	05/03/21 14:53	1
Arsenic	ND		10	6.4	ug/L		04/30/21 08:48	05/03/21 14:53	1
Cadmium	ND		5.0	0.30	ug/L		04/30/21 08:48	05/03/21 14:53	1
Chromium	ND		5.0	0.71	ug/L		04/30/21 08:48	05/03/21 14:53	1
Copper	ND		25	4.1	ug/L		04/30/21 08:48	05/03/21 14:53	1
Lead	ND		10	2.8	ug/L		04/30/21 08:48	05/03/21 14:53	1
Nickel	ND		40	1.6	ug/L		04/30/21 08:48	05/03/21 14:53	1
Zinc	ND		20	19	ug/L		04/30/21 08:48	05/03/21 14:53	1
<u> </u>									

Lab Sample ID: LCS 180-355176/2-A

Matrix: Water

Analysis Batch: 355531

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Prep Batch: 355176

LCS LCS Spike %Rec. Added Result Qualifier D %Rec Limits Analyte Unit Silver 250 87 85 - 115 217 ug/L Arsenic 1000 1070 ug/L 107 85 - 115 Cadmium 500 534 ug/L 107 85 - 115 500 503 101 Chromium ug/L 85 - 115 500 516 103 85 - 115 Copper ug/L ug/L 500 485 97 85 - 115 Lead Nickel 500 499 ug/L 100 85 - 115 Zinc 250 257 85 - 115 ug/L 103

Method: EPA 245.1 Rev. - Mercury (CVAA)

Lab Sample ID: MB 180-355618/1-A

Matrix: Water

Analysis Batch: 355935

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 355618**

MB MB

MD MD

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Mercury $\overline{\mathsf{ND}}$ 0.20 0.13 ug/L 05/05/21 11:43 05/06/21 10:20

Lab Sample ID: LCS 180-355618/2-A

Matrix: Water

Analysis Batch: 355935

Client Sample ID: Lab Control Sample Prep Type: Total/NA **Prep Batch: 355618**

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Mercury 2.50 2.60 104 85 - 115 ug/L

Method: SM 4500CN E - Total Cyanide

Lab Sample ID: MB 180-354482/4-A

Matrix: Water

Analysis Batch: 354705

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 354482

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Cyanide, Total ND 0.010 0.0080 mg/L 04/24/21 18:00 04/26/21 17:37

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: SM 4500CN E - Total Cyanide (Continued)

Analyte

Cyanide, Total

Lab Sample ID: HLCS 180-354482/2-A				Clie	nt Sai	mple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 354705							Prep Batch: 354482
	Spike	HLCS	HLCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.250	0.248		mg/L		99	90 - 110
Lab Sample ID: LCS 180-354482/3-A				Clie	nt Saı	nple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 354705							Prep Batch: 354482
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.200	0.205		mg/L		103	90 - 110
Lab Sample ID: LLCS 180-354482/1-A Matrix: Water Analysis Batch: 354705				Clie	nt Saı	mple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 354482

LLCS LLCS

0.0519

Result Qualifier Unit

mg/L

Spike

Added

0.0500

%Rec.

Limits

90 - 110

D %Rec

QC Association Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

GC/MS VOA

Analysis Batch: 354671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	EPA 624	
180-120179-2	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-354671/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-354671/1004	Lab Control Sample	Total/NA	Water	EPA 624	
180-120179-1 DU	POTW OUTFALL (041621)	Total/NA	Water	EPA 624	

Analysis Batch: 355217

Lab Sample ID 180-120179-1 - RADL	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-355217/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-355217/1002	Lab Control Sample	Total/NA	Water	EPA 624	

GC/MS Semi VOA

Prep Batch: 353647

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method 625	Prep Batch
MB 180-353647/1-A	Method Blank	Total/NA	Water	625	
LCS 180-353647/2-A	Lab Control Sample	Total/NA	Water	625	
180-120179-1 MS	POTW OUTFALL (041621)	Total/NA	Water	625	

Analysis Batch: 354322

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method EPA 625	Prep Batch 353647
MB 180-353647/1-A	Method Blank	Total/NA	Water	EPA 625	353647
LCS 180-353647/2-A	Lab Control Sample	Total/NA	Water	EPA 625	353647
180-120179-1 MS	POTW OUTFALL (041621)	Total/NA	Water	EPA 625	353647

Metals

Prep Batch: 355176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total Recoverable	Water	200.7	
MB 180-355176/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 180-355176/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 355531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total Recoverable	Water	EPA 200.7 Rev 4	355176
MB 180-355176/1-A	Method Blank	Total Recoverable	Water	EPA 200.7 Rev 4	355176
LCS 180-355176/2-A	Lab Control Sample	Total Recoverable	Water	EPA 200.7 Rev 4	355176

Prep Batch: 355618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	245.1	
MB 180-355618/1-A	Method Blank	Total/NA	Water	245.1	
LCS 180-355618/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 355935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	EPA 245.1 Rev.	355618
MB 180-355618/1-A	Method Blank	Total/NA	Water	EPA 245.1 Rev.	355618

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Page 26 of 32 5/10/2021

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QC Association Summary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Metals (Continued)

Analys	is Batch:	355935	(Continued)
Allalva	ıs Dalcıı.	33333	l Oullillueu

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-355618/2-A	Lab Control Sample	Total/NA	Water	EPA 245.1 Rev.	355618

General Chemistry

Prep Batch: 354482

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method SM 4500 CN C	Prep Batch
MB 180-354482/4-A	Method Blank	Total/NA	Water	SM 4500 CN C	
HLCS 180-354482/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LCS 180-354482/3-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LLCS 180-354482/1-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	

Analysis Batch: 354705

Lab Sample ID MB 180-354482/4-A	Client Sample ID Method Blank	Prep Type Total/NA	Matrix Water	Method SM 4500CN E	Prep Batch 354482
HLCS 180-354482/2-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482
LCS 180-354482/3-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482
LLCS 180-354482/1-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482

Analysis Batch: 354706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	SM 4500CN E	354482

Sample Co-Corab Matrix Cont. E. P. C.	Sample Sample ("Type Sample ("Type Conf." Epere ("Type Conf." Eper	Sample (C=Comp.) Type (C=Comp.) A Sample (C=Comp.) A Waste Codes for the sample in
Time GeGab) Matrix Cont. E. D. O. C. V. 7 1.21.3 W. 3 1.21.3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1 Time G=Grab) Matrix Cont.	Time G=Grab) Matrix Cont.
180-120179 Chain of Custody	Other A Waste Codes for the sample in the	Other A Waste Codes for the sample in the
	Other A Waste Codes for the sample in the	A Waste Codes for the sample in the



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ORIGIN I D. KEUA SETH CAPLAN TSS CONNELLEY DR EUTRORIES TESTAMERICA SUITE SUITE SUITE STATES US

SAMPLE RECEIVING
301 ALPHA DR

RIDC PARK

PITTSBURGH PA 15238

REF: ARCADIS CYTEC

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SATURDAY 12:00P
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Part # 156297-435 RRDW2

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Eurofins TestAmerica, Pittsburgh	30			eurofins
Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468		Chain of Custody Record		Chylomen lexung America
Client Information	Sampler:	Lab PM: Brown, Shafi	Carrier Tracking No(s):	COC No: 180-69728-13680.1
Client Contact: Mr. Chad Crocker	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin:	Page:
Company: Bridgestone Metalpha U.S.A	PWSID:	Analysis	Analysis Reguested	Job #:
Address: 570 International Blvd	Due Date Requested:			8
Gity. Clarksville	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip: TN, 37040	Compliance Project: A Yes A No	12-93		
Phone:	PO#: 7200008713 for 2021	. 6010E		F - MeOH R - Na2S203 G - Amchlor S - H2SO4
Email: CrockerChad@bfusa.com	WO#:	No)	S	I - Ice J - DI Water
Project Name: Bridgestone Metalpha	Project #: 18022858	SE Or I	aniet	K - EDTA L - EDA
Site:	SSOW#:	SD (Y	oo jo	Other:
Sample Identification	Sample Cample (G=comp.		otal Number	
	X	tion Code: X N N A N		Special instructions/Note:
e Characte	4/16/21 1335 6	×		
32				
Possible Hazard Identification Xon-Hazard	□ Poison B □ Unknown □ Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Mont	etained longer than 1 month) Archive For
		Special Instructions/QC Requirements:		
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	7
Reinquired by	Date/Tigne: $4/16/2$ / 2 / 350	2	assar	1-31 Compare TAP
Reiniduished by:	Date/Time:		Date/Tighe:	M 1 33 Company
Kelinquished by:	Date/Time:	Company Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) "C and Other Remarks	ier Remarks:	
021				Ver: 11:01/2020

Page 31 of 32

5/10/2021

Client: ARCADIS U.S. Inc Job Number: 180-120179-1

Login Number: 120179 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-126292-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan

Authorized for release by: 9/20/2021 11:27:40 AM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-126292-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	16
QC Association Summary	
Chain of Custody	23
Receipt Checklists	27

3

4

9

10

12

Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 180-126292-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-126292-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-126292-1

Receipt

The samples were received on 8/27/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.1° C.

GC/MS VOA

The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-2 (082621) (180-126292-2), MW-10D (082621) (180-126292-3), COMBEFF(082621) (180-126292-4), TRIP BLANK (180-126292-5) and (BFB 180-370028/1). The requested target analyte list contains 2-Chloroethyl vinyl ether and Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Due to the concentration of target compounds detected and/or matrix, several samples were analyzed at a dilution. The reporting limits have been adjusted accordingly...

The higher dilutions of sample EW-2 (082621) (180-126292-2) and COMBEFF(082621) (180-126292-4) had the surrogates diluted out.

Sample EW-2 (082621) (180-126292-2) and COMBEFF(082621) (180-126292-4) were re-analyzed at a higher dilutions outside of the holding time. The results have been flagged with an "H" qualifier.

The laboratory control sample (LCS) for analytical batch 180-370028 recovered outside control limits for the following analytes: Acrolein, 1,1,2,2-Tetrachloroethane and Acrylonitrile. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The laboratory control sample duplicate (LCSD) for analytical batch 180-370028 recovered outside control limits for the following analytes: Bromomethane. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

The relative percent difference between the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 180-370028 recovered outside control limits for the following analytes: Bromomethane.

The laboratory control sample (LCS) for analytical batch 180-370169 recovered outside control limits for the following analytes: 1,1,2,2-Tetrachloroethane and Acrolein. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The continuing calibration verification (CCV) analyzed in batch 180-370169 was outside the method criteria for the following analyte(s): Acrolein and 1,1,2,2-Tetrachloroethane (LOW). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

GC		

Qualifier	Qualifier Description
*_	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
Н	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Robalt to too than the RE but ground than or oqual to the MEE and the contentiation to an approximate value.						
Surrogate recovery exceeds control limits, low biased.						
ossary						
These commonly used abbreviations may or may not be present in this report.						
Listed under the "D" column to designate that the result is reported on a dry weight basis						
Percent Recovery						
Contains Free Liquid						
Colony Forming Unit						
Contains No Free Liquid						
Duplicate Error Ratio (normalized absolute difference)						
Dilution Factor						
Detection Limit (DoD/DOE)						
Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample						
Decision Level Concentration (Radiochemistry)						
Estimated Detection Limit (Dioxin)						
Limit of Detection (DoD/DOE)						
Limit of Quantitation (DoD/DOE)						
EPA recommended "Maximum Contaminant Level"						

MDC Minimum Detectable Concentration (Radiochemistry)
MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

MDA

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Minimum Detectable Activity (Radiochemistry)

NEG Negative / Absent
POS Positive / Present
PQL Practical Quantitati

PQL Practical Quantitation Limit
PRES Presumptive

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	09-14-21
Georgia	State	PA 02-00416	09-14-21
Illinois	NELAP	004375	09-14-21
Kansas	NELAP	E-10350	09-14-21
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	09-14-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	09-14-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	09-14-21
New York	NELAP	11182	09-14-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	09-14-21
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	09-14-21
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	09-14-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	09-14-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	09-14-21
Wisconsin	State	998027800	08-31-22

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 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-126292-1	EW-1 (082621)	Water	08/26/21 10:10	08/27/21 09:30
180-126292-2	EW-2 (082621)	Water	08/26/21 10:15	08/27/21 09:30
180-126292-3	MW-10D (082621)	Water	08/26/21 10:20	08/27/21 09:30
180-126292-4	COMBEFF(082621)	Water	08/26/21 10:25	08/27/21 09:30
180-126292-5	TRIP BLANK	Water	08/26/21 00:00	08/27/21 09:30

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Job ID: 180-126292-1

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Method Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Laboratory Method **Method Description** Protocol EPA 624 Volatile Organic Compounds (GC/MS) EPA TAL PIT

Job ID: 180-126292-1

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-1 (082621)

Date Collected: 08/26/21 10:10 Date Received: 08/27/21 09:30

Lab Sample ID: 180-126292-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6		5	5 mL	5 mL	370028	09/02/21 17:57	SW1	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6	DL	250	5 mL	5 mL	370169	09/04/21 00:57	C1K	TAL PIT

Client Sample ID: EW-2 (082621)

Date Collected: 08/26/21 10:15 Date Received: 08/27/21 09:30

Lab Sample ID: 180-126292-2 **Matrix: Water**

Batch Batch Dil Initial Final Batch Prepared Method or Analyzed **Prep Type** Type Run **Factor Amount** Amount Number Analyst Lab Total/NA EPA 624 370028 09/02/21 18:26 SW1 TAL PIT Analysis 5 5 mL 5 mL Instrument ID: CHHP6 Total/NA Analysis EPA 624 DL 500 5 mL 5 mL 370169 09/03/21 23:30 C1K TAL PIT Instrument ID: CHHP6 TAL PIT Total/NA Analysis EPA 624 DL2 1000 5 mL 370893 09/10/21 18:17 PJJ 5 mL Instrument ID: CHHP6

Client Sample ID: MW-10D (082621)

Date Collected: 08/26/21 10:20

Date Received: 08/27/21 09:30

Lab Sample ID: 180-126292-3 **Matrix: Water**

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		5	5 mL	5 mL	370028	09/02/21 18:54	SW1	TAL PIT
	Instrumer	t ID: CHHP6								

Client Sample ID: COMBEFF(082621)

Lab Sample ID: 180-126292-4 Date Collected: 08/26/21 10:25 **Matrix: Water** Date Received: 08/27/21 09:30

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6		5	5 mL	5 mL	370028	09/02/21 19:24	SW1	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP6	DL	500	5 mL	5 mL	370169	09/04/21 00:28	C1K	TAL PIT

Date Received: 08/27/21 09:30

	Total/NA	Analysis	EPA 624	DL	500	5 mL	5 mL	370169	09/04/21 00:28	C1K	TAL PIT	
		Instrumer	nt ID: CHHP6									
C	Client San	nple ID: TRI	P BLANK					La	b Sample II	D: 180)-126292-5	
D	ate Collect	ed: 08/26/21 0	0:00							N	Matrix: Water	

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624 at ID: CHHP6		1	5 mL	5 mL	370028	09/02/21 19:53	SW1	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6	RA	1	5 mL	5 mL	370169	09/03/21 22:32	C1K	TAL PIT

Eurofins TestAmerica, Pittsburgh

Page 8 of 27

Lab Chronicle

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

C1K = Chamaiporn Krisorn PJJ = Patrick Journet SW1 = Sunan Wang-un

Job ID: 180-126292-1

Client Sample ID: EW-1 (082621)

Date Collected: 08/26/21 10:10 Date Received: 08/27/21 09:30 Lab Sample ID: 180-126292-1

Matrix: Water

Job ID: 180-126292-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND	*_	5.0	3.0	ug/L			09/02/21 17:57	5
1,1,2-Trichloroethane	3.0	J	5.0	2.3	ug/L			09/02/21 17:57	5
1,1-Dichloroethane	ND		5.0	1.5	ug/L			09/02/21 17:57	5
1,1-Dichloroethene	ND		5.0	2.8	ug/L			09/02/21 17:57	5
1,2-Dichloropropane	ND		5.0	3.3	ug/L			09/02/21 17:57	5
1,2-Dichlorobenzene	ND		5.0	1.8	ug/L			09/02/21 17:57	5
1,3-Dichlorobenzene	ND		5.0	2.5	ug/L			09/02/21 17:57	5
1,4-Dichlorobenzene	ND		5.0	2.7	ug/L			09/02/21 17:57	5
2-Chloroethyl vinyl ether	ND		10	8.6	ug/L			09/02/21 17:57	5
Acrolein	ND	*_	100	80	ug/L			09/02/21 17:57	5
Acrylonitrile	ND	*_	100	39	ug/L			09/02/21 17:57	5
Benzene	ND		5.0	3.0	ug/L			09/02/21 17:57	5
Bromoform	ND		5.0	4.9	ug/L			09/02/21 17:57	5
Bromomethane	ND	*+ *1	5.0	4.4	ug/L			09/02/21 17:57	5
Carbon disulfide	ND		5.0	4.4	ug/L			09/02/21 17:57	5
Carbon tetrachloride	ND		5.0	4.4	ug/L			09/02/21 17:57	5
Chlorobenzene	ND		5.0	2.5	ug/L			09/02/21 17:57	5
Chloroform	ND		5.0	3.0	ug/L			09/02/21 17:57	5
Chloromethane	ND		5.0	4.5	ug/L			09/02/21 17:57	5
cis-1,2-Dichloroethene	8.5		5.0	3.5	ug/L			09/02/21 17:57	5
cis-1,3-Dichloropropene	ND		5.0	3.0	ug/L			09/02/21 17:57	5
Ethylbenzene	ND		5.0	2.5	ug/L			09/02/21 17:57	5
Tetrachloroethene	ND		5.0	2.3	ug/L			09/02/21 17:57	5
Toluene	ND		5.0	2.3	ug/L			09/02/21 17:57	5
trans-1,2-Dichloroethene	ND		5.0	3.4	ug/L			09/02/21 17:57	5
trans-1,3-Dichloropropene	ND		5.0	2.9	ug/L			09/02/21 17:57	5
Trichloroethene	20		5.0	3.4	ug/L			09/02/21 17:57	5
Dibromochloromethane	ND		5.0	4.2	ug/L			09/02/21 17:57	5
Dichlorobromomethane	ND		5.0	3.2	ug/L			09/02/21 17:57	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	64		42 - 142					09/02/21 17:57	5
4-Bromofluorobenzene (Surr)	95		54 - 114					09/02/21 17:57	5
Toluene-d8 (Surr)	120		61 - 125					09/02/21 17:57	5
Dibromofluoromethane (Surr)	107		60 - 150					09/02/21 17:57	5

Method: EPA 624 - Volatile Organic Compounds (GC/MS) - DL											
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
1,1,1-Trichloroethane	ND		250	150	ug/L			09/04/21 00:57	250		
1,2-Dichloroethane	1100		250	140	ug/L			09/04/21 00:57	250		
Methylene Chloride	500		250	220	ug/L			09/04/21 00:57	250		
Vinyl chloride	ND		250	100	ug/L			09/04/21 00:57	250		

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		S1-	42 - 142		09/04/21 00:57	250
4-Bromofluorobenzene (Surr)	0	S1-	54 - 114		09/04/21 00:57	250
Toluene-d8 (Surr)	0	S1-	61 - 125		09/04/21 00:57	250
Dibromofluoromethane (Surr)	0	S1-	60 - 150		09/04/21 00:57	250

Eurofins TestAmerica, Pittsburgh

Client Sample ID: EW-2 (082621) Lab Sample ID: 180-126292-2

Date Collected: 08/26/21 10:15 Date Received: 08/27/21 09:30

Matrix: Water

Job ID: 180-126292-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND	*_	5.0	3.0	ug/L			09/02/21 18:26	5
1,1,2-Trichloroethane	50		5.0	2.3	ug/L			09/02/21 18:26	5
1,1-Dichloroethane	11		5.0	1.5	ug/L			09/02/21 18:26	5
1,1-Dichloroethene	4.6	J	5.0	2.8	ug/L			09/02/21 18:26	5
1,2-Dichloropropane	ND		5.0	3.3	ug/L			09/02/21 18:26	5
1,2-Dichlorobenzene	ND		5.0	1.8	ug/L			09/02/21 18:26	5
1,3-Dichlorobenzene	ND		5.0	2.5	ug/L			09/02/21 18:26	5
1,4-Dichlorobenzene	ND		5.0	2.7	ug/L			09/02/21 18:26	5
2-Chloroethyl vinyl ether	ND		10	8.6	ug/L			09/02/21 18:26	5
Acrolein	ND	*_	100	80	ug/L			09/02/21 18:26	5
Acrylonitrile	ND	*-	100	39	ug/L			09/02/21 18:26	5
Benzene	ND		5.0	3.0	ug/L			09/02/21 18:26	5
Bromoform	ND		5.0	4.9	ug/L			09/02/21 18:26	5
Bromomethane	ND	*+ *1	5.0	4.4	ug/L			09/02/21 18:26	5
Carbon disulfide	ND		5.0	4.4	ug/L			09/02/21 18:26	5
Carbon tetrachloride	ND		5.0	4.4	ug/L			09/02/21 18:26	5
Chlorobenzene	ND		5.0	2.5	ug/L			09/02/21 18:26	5
Chloroform	ND		5.0	3.0	ug/L			09/02/21 18:26	5
Chloromethane	ND		5.0	4.5	ug/L			09/02/21 18:26	5
cis-1,2-Dichloroethene	74		5.0	3.5	ug/L			09/02/21 18:26	5
cis-1,3-Dichloropropene	ND		5.0	3.0	ug/L			09/02/21 18:26	5
Ethylbenzene	ND		5.0	2.5	ug/L			09/02/21 18:26	5
Tetrachloroethene	4.6	J	5.0	2.3	ug/L			09/02/21 18:26	5
Toluene	ND		5.0	2.3	ug/L			09/02/21 18:26	5
trans-1,2-Dichloroethene	14		5.0	3.4	ug/L			09/02/21 18:26	5
trans-1,3-Dichloropropene	ND		5.0	2.9	ug/L			09/02/21 18:26	5
Trichloroethene	32		5.0	3.4	ug/L			09/02/21 18:26	5
Dibromochloromethane	ND		5.0	4.2	ug/L			09/02/21 18:26	5
Dichlorobromomethane	ND		5.0	3.2	ug/L			09/02/21 18:26	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	55		42 - 142					09/02/21 18:26	5
4-Bromofluorobenzene (Surr)	92		54 - 114					09/02/21 18:26	5
Toluene-d8 (Surr)	112		61 - 125					09/02/21 18:26	5
Dibromofluoromethane (Surr)	97		60 - 150					09/02/21 18:26	5

Method: EPA 624 - Volatile	Organic Comp	ounds (G	C/MS) - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD		500	300	ug/L			09/03/21 23:30	500
1,2-Dichloroethane	17000		500	290	ug/L			09/03/21 23:30	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		S1-	42 - 142					09/03/21 23:30	500
4-Bromofluorobenzene (Surr)	0	S1-	54 - 114					09/03/21 23:30	500
Toluene-d8 (Surr)	0	S1-	61 - 125					09/03/21 23:30	500
Dibromofluoromethane (Surr)	0	S1-	60 - 150					09/03/21 23:30	500

Method: EPA 624 - Volatile Org	janic Compounds	(GC/MS) - DL	2					
Analyte	Result Qualifie	r RL	MDL U	nit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	10000 H	1000	890 uç	g/L			09/10/21 18:17	1000

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-2 (082621)

Lab Sample ID: 180-126292-2 Date Collected: 08/26/21 10:15

Matrix: Water Date Received: 08/27/21 09:30

Method: EPA 624 - Volatile Organic Compounds (GC/MS) - DL2 (Continued) Analyte Result Qualifier MDL Unit D Analyzed Dil Fac Prepared Vinyl chloride 880 JH 1000 400 ug/L 09/10/21 18:17 1000 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 62 42 - 142 09/10/21 18:17 1000 4-Bromofluorobenzene (Surr) 95 09/10/21 18:17 54 - 114 1000 Toluene-d8 (Surr) 107 61 - 125 09/10/21 18:17 1000 Dibromofluoromethane (Surr) 112 60 - 150 09/10/21 18:17 1000

Client Sample ID: MW-10D (082621) Lab Sample ID: 180-126292-3

Date Collected: 08/26/21 10:20 **Matrix: Water**

Date Received: 08/27/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	3.0	ug/L		-	09/02/21 18:54	5
1,1,2,2-Tetrachloroethane	ND	*_	5.0	3.0	ug/L			09/02/21 18:54	5
1,1,2-Trichloroethane	ND		5.0	2.3	ug/L			09/02/21 18:54	5
1,1-Dichloroethane	2.6	J	5.0	1.5	ug/L			09/02/21 18:54	5
1,1-Dichloroethene	ND		5.0	2.8	ug/L			09/02/21 18:54	5
1,2-Dichloroethane	83		5.0	2.9	ug/L			09/02/21 18:54	5
1,2-Dichloropropane	ND		5.0	3.3	ug/L			09/02/21 18:54	5
1,2-Dichlorobenzene	ND		5.0	1.8	ug/L			09/02/21 18:54	5
1,3-Dichlorobenzene	ND		5.0	2.5	ug/L			09/02/21 18:54	5
1,4-Dichlorobenzene	ND		5.0	2.7	ug/L			09/02/21 18:54	5
2-Chloroethyl vinyl ether	ND		10	8.6	ug/L			09/02/21 18:54	5
Acrolein	ND	*_	100	80	ug/L			09/02/21 18:54	5
Acrylonitrile	ND	*_	100	39	ug/L			09/02/21 18:54	5
Benzene	ND		5.0	3.0	ug/L			09/02/21 18:54	5
Bromoform	ND		5.0	4.9	ug/L			09/02/21 18:54	5
Bromomethane	ND	*+ *1	5.0	4.4	ug/L			09/02/21 18:54	5
Carbon disulfide	22		5.0	4.4	ug/L			09/02/21 18:54	5
Carbon tetrachloride	ND		5.0	4.4	ug/L			09/02/21 18:54	5
Chlorobenzene	ND		5.0	2.5	ug/L			09/02/21 18:54	5
Chloroform	ND		5.0	3.0	ug/L			09/02/21 18:54	5
Chloromethane	ND		5.0	4.5	ug/L			09/02/21 18:54	5
cis-1,2-Dichloroethene	13		5.0	3.5	ug/L			09/02/21 18:54	5
cis-1,3-Dichloropropene	ND		5.0	3.0	ug/L			09/02/21 18:54	5
Ethylbenzene	ND		5.0	2.5	ug/L			09/02/21 18:54	5
Methylene Chloride	110		5.0	4.4	ug/L			09/02/21 18:54	5
Tetrachloroethene	ND		5.0	2.3	ug/L			09/02/21 18:54	5
Toluene	ND		5.0	2.3	ug/L			09/02/21 18:54	5
trans-1,2-Dichloroethene	6.4		5.0	3.4	ug/L			09/02/21 18:54	5
trans-1,3-Dichloropropene	ND		5.0	2.9	ug/L			09/02/21 18:54	5
Trichloroethene	10		5.0	3.4	ug/L			09/02/21 18:54	5
Vinyl chloride	8.8		5.0	2.0	ug/L			09/02/21 18:54	5
Dibromochloromethane	ND		5.0	4.2	ug/L			09/02/21 18:54	5
Dichlorobromomethane	ND		5.0	3.2	ug/L			09/02/21 18:54	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	67		42 - 142					09/02/21 18:54	5

Eurofins TestAmerica, Pittsburgh

Client Sample ID: MW-10D (082621)

Date Collected: 08/26/21 10:20 Date Received: 08/27/21 09:30 Lab Sample ID: 180-126292-3

Matrix: Water

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		54 - 114		09/02/21 18:54	5
Toluene-d8 (Surr)	111		61 - 125		09/02/21 18:54	5
Dibromofluoromethane (Surr)	108		60 - 150		09/02/21 18:54	5

Client Sample ID: COMBEFF(082621)

Lab Sample ID: 180-126292-4

Date Collected: 08/26/21 10:25 Matrix: Water

Date Received: 08/27/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD		5.0	3.0	ug/L			09/02/21 19:24	5
1,1,2,2-Tetrachloroethane	ND	*_	5.0	3.0	ug/L			09/02/21 19:24	5
1,1,2-Trichloroethane	13		5.0	2.3	ug/L			09/02/21 19:24	5
1,1-Dichloroethane	4.5	J	5.0	1.5	ug/L			09/02/21 19:24	5
1,1-Dichloroethene	3.2	J	5.0	2.8	ug/L			09/02/21 19:24	5
1,2-Dichloropropane	ND		5.0	3.3	ug/L			09/02/21 19:24	5
1,2-Dichlorobenzene	ND		5.0	1.8	ug/L			09/02/21 19:24	5
1,3-Dichlorobenzene	ND		5.0	2.5	ug/L			09/02/21 19:24	5
1,4-Dichlorobenzene	ND		5.0	2.7	ug/L			09/02/21 19:24	5
2-Chloroethyl vinyl ether	ND		10	8.6	ug/L			09/02/21 19:24	5
Acrolein	ND	*-	100	80	ug/L			09/02/21 19:24	5
Acrylonitrile	ND	*-	100	39	ug/L			09/02/21 19:24	5
Benzene	ND		5.0	3.0	ug/L			09/02/21 19:24	5
Bromoform	ND		5.0	4.9	ug/L			09/02/21 19:24	5
Bromomethane	ND	*+ *1	5.0	4.4	ug/L			09/02/21 19:24	5
Carbon disulfide	5.5		5.0	4.4	ug/L			09/02/21 19:24	5
Carbon tetrachloride	ND		5.0	4.4	ug/L			09/02/21 19:24	5
Chlorobenzene	ND		5.0	2.5	ug/L			09/02/21 19:24	5
Chloroform	ND		5.0	3.0	ug/L			09/02/21 19:24	5
Chloromethane	ND		5.0	4.5	ug/L			09/02/21 19:24	5
cis-1,2-Dichloroethene	28		5.0	3.5	ug/L			09/02/21 19:24	5
cis-1,3-Dichloropropene	ND		5.0	3.0	ug/L			09/02/21 19:24	5
Ethylbenzene	ND		5.0	2.5	ug/L			09/02/21 19:24	5
Tetrachloroethene	ND		5.0	2.3	ug/L			09/02/21 19:24	5
Toluene	ND		5.0	2.3	ug/L			09/02/21 19:24	5
trans-1,2-Dichloroethene	7.8		5.0	3.4	ug/L			09/02/21 19:24	5
trans-1,3-Dichloropropene	ND		5.0	2.9	ug/L			09/02/21 19:24	5
Trichloroethene	17		5.0	3.4	ug/L			09/02/21 19:24	5
Vinyl chloride	88		5.0	2.0	ug/L			09/02/21 19:24	5
Dibromochloromethane	ND		5.0	4.2	ug/L			09/02/21 19:24	5
Dichlorobromomethane	ND		5.0	3.2	ug/L			09/02/21 19:24	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1 2-Dichloroethane-d4 (Surr)	67		42 - 142			-		09/02/21 19:24	

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	67		42 - 142		09/02/21 19:24	5	
4-Bromofluorobenzene (Surr)	96		54 - 114		09/02/21 19:24	5	
Toluene-d8 (Surr)	116		61 - 125		09/02/21 19:24	5	
Dibromofluoromethane (Surr)	105		60 - 150		09/02/21 19:24	5	

Eurofins TestAmerica, Pittsburgh

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0 S1-

0 S1-

Client Sample ID: COMBEFF(082621)

Date Collected: 08/26/21 10:25 Date Received: 08/27/21 09:30 Lab Sample ID: 180-126292-4

Matrix: Water

Method: EPA 624 - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	4000		500	290	ug/L			09/04/21 00:28	500
Methylene Chloride	15000		500	440	ug/L			09/04/21 00:28	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		S1-	42 - 142					09/04/21 00:28	500
4-Bromofluorobenzene (Surr)	0	S1-	54 - 114					09/04/21 00:28	500

61 - 125

60 - 150

Client Sample ID: TRIP BLANK Lab Sample ID: 180-126292-5

Date Collected: 08/26/21 00:00

Matrix: Water

09/04/21 00:28

09/04/21 00:28

Date Received: 08/27/21 09:30

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/02/21 19:53	1
1,1,2,2-Tetrachloroethane	ND	*-	1.0	0.60	ug/L			09/02/21 19:53	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/02/21 19:53	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/02/21 19:53	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/02/21 19:53	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/02/21 19:53	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/02/21 19:53	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/02/21 19:53	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/02/21 19:53	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/02/21 19:53	1
Acrolein	ND	*_	20	16	ug/L			09/02/21 19:53	1
Acrylonitrile	ND	*_	20	7.8	ug/L			09/02/21 19:53	1
Benzene	ND		1.0	0.60	ug/L			09/02/21 19:53	1
Bromoform	ND		1.0	0.98	ug/L			09/02/21 19:53	1
Bromomethane	ND	*+ *1	1.0	0.89	ug/L			09/02/21 19:53	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/02/21 19:53	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/02/21 19:53	1
Chloroform	ND		1.0	0.60	ug/L			09/02/21 19:53	1
Chloromethane	ND		1.0	0.90	ug/L			09/02/21 19:53	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/02/21 19:53	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/02/21 19:53	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/02/21 19:53	1
Tetrachloroethene	ND		1.0	0.47	ug/L			09/02/21 19:53	1
Toluene	ND		1.0	0.46	ug/L			09/02/21 19:53	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			09/02/21 19:53	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/02/21 19:53	1
Trichloroethene	ND		1.0	0.69	ug/L			09/02/21 19:53	1
Vinyl chloride	ND		1.0	0.40	ug/L			09/02/21 19:53	1
Dibromochloromethane	ND		1.0	0.84	ug/L			09/02/21 19:53	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/02/21 19:53	1
Surrogato	% Pocovory	Qualifier	Limite				Propared	Analyzod	Dil Eac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		42 - 142		09/02/21 19:53	1
4-Bromofluorobenzene (Surr)	102		54 - 114		09/02/21 19:53	1
Toluene-d8 (Surr)	122		61 - 125		09/02/21 19:53	1

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Page 14 of 27

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500

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Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

Dibromofluoromethane (Surr)

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-126292-5 Date Collected: 08/26/21 00:00 **Matrix: Water**

Date Received: 08/27/21 09:30

Method: EPA 624 - Vo	platile Organic Compounds	(GC/MS) (Continued)
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114

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	117	60 - 150		09/02/21 19:53	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	MD		1.0	0.57	ug/L			09/03/21 22:32	1
Carbon disulfide	ND		1.0	0.88	ug/L			09/03/21 22:32	1
Methylene Chloride	1.1		1.0	0.89	ug/L			09/03/21 22:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	64		42 - 142					09/03/21 22:32	1
4-Bromofluorobenzene (Surr)	89		54 - 114					09/03/21 22:32	1
Toluene-d8 (Surr)	117		61 - 125					09/03/21 22:32	1

60 - 150

09/03/21 22:32

MB MB

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-370028/10

Matrix: Water

Analysis Batch: 370028

Client Sample ID: Method Blank

Prep Type: Total/NA

Ameliate	D 14	O	D.	MDI	1114	_	B	A	D11 F
Analyte		Qualifier	RL		Unit	<u>D</u> -	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			09/02/21 15:31	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			09/02/21 15:31	1
1,1,2-Trichloroethane	ND		1.0		ug/L			09/02/21 15:31	1
1,1-Dichloroethane	ND		1.0		ug/L			09/02/21 15:31	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/02/21 15:31	1
1,2-Dichloroethane	ND		1.0		ug/L			09/02/21 15:31	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/02/21 15:31	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/02/21 15:31	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/02/21 15:31	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/02/21 15:31	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/02/21 15:31	1
Acrolein	ND		20	16	ug/L			09/02/21 15:31	1
Acrylonitrile	ND		20	7.8	ug/L			09/02/21 15:31	1
Benzene	ND		1.0	0.60	ug/L			09/02/21 15:31	1
Bromoform	ND		1.0	0.98	ug/L			09/02/21 15:31	1
Bromomethane	ND		1.0	0.89	ug/L			09/02/21 15:31	1
Carbon disulfide	ND		1.0	0.88	ug/L			09/02/21 15:31	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/02/21 15:31	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/02/21 15:31	1
Chloroform	ND		1.0	0.60	ug/L			09/02/21 15:31	1
Chloromethane	ND		1.0	0.90	ug/L			09/02/21 15:31	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/02/21 15:31	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/02/21 15:31	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/02/21 15:31	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/02/21 15:31	1
Tetrachloroethene	ND		1.0	0.47	ug/L			09/02/21 15:31	1
Toluene	ND		1.0	0.46	ug/L			09/02/21 15:31	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			09/02/21 15:31	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/02/21 15:31	1
Trichloroethene	ND		1.0		ug/L			09/02/21 15:31	1
Vinyl chloride	ND		1.0		ug/L			09/02/21 15:31	1
Dibromochloromethane	ND		1.0		ug/L			09/02/21 15:31	1
Dichlorobromomethane	ND		1.0		ug/L			09/02/21 15:31	1
					-				

MB	MB	

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	74	42 - 142	09/02/21 15:3	1
4-Bromofluorobenzene (Surr)	99	54 - 114	09/02/21 15:3:	1 1
Toluene-d8 (Surr)	119	61 - 125	09/02/21 15:3:	1 1
Dibromofluoromethane (Surr)	120	60 - 150	09/02/21 15:3	1 1

Lab Sample ID: LCS 180-370028/3

Matrix: Water

Analysis Batch: 370028

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	5.47	*_	ug/L		55	60 - 140	
1,1,2-Trichloroethane	10.0	7.54		ug/L		75	71 - 129	

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Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Page 16 of 27

QC Sample Results

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-126292-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-370028/3

Matrix: Water

Analysis Batch: 370028

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike LCS LC		LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethane	10.0	9.79		ug/L		98	73 - 127
1,1-Dichloroethene	10.0	9.62		ug/L		96	50 - 150
1,2-Dichloroethane	10.0	7.11		ug/L		71	70 - 130
1,2-Dichloropropane	10.0	9.77		ug/L		98	35 - 150
1,2-Dichlorobenzene	10.0	8.29		ug/L		83	65 - 135
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	73 - 127
1,4-Dichlorobenzene	10.0	9.72		ug/L		97	65 - 135
2-Chloroethyl vinyl ether	20.0	9.82		ug/L		49	10 - 150
Acrolein	30.0	ND	*_	ug/L		40	60 - 140
Acrylonitrile	100	49.5	*_	ug/L		49	60 - 140
Benzene	10.0	10.6		ug/L		106	65 - 135
Bromoform	10.0	8.77		ug/L		88	71 - 129
Bromomethane	10.0	13.3		ug/L		133	15 - 150
Carbon disulfide	10.0	12.1		ug/L		121	44 - 150
Carbon tetrachloride	10.0	9.65		ug/L		96	73 - 127
Chlorobenzene	10.0	9.67		ug/L		97	66 - 134
Chloroform	10.0	10.5		ug/L		105	70 - 135
Chloromethane	10.0	5.92		ug/L		59	10 - 150
cis-1,2-Dichloroethene	10.0	9.31		ug/L		93	39 - 150
cis-1,3-Dichloropropene	10.0	13.1		ug/L		131	25 - 150
Ethylbenzene	10.0	10.2		ug/L		102	60 - 140
Methylene Chloride	10.0	10.4		ug/L		104	60 - 140
Tetrachloroethene	10.0	9.58		ug/L		96	74 - 126
Toluene	10.0	10.4		ug/L		104	75 - 125
trans-1,2-Dichloroethene	10.0	9.22		ug/L		92	70 - 130
trans-1,3-Dichloropropene	10.0	9.75		ug/L		97	50 - 150
Trichloroethene	10.0	9.28		ug/L		93	67 - 133
Vinyl chloride	10.0	8.22		ug/L		82	10 - 150
Dibromochloromethane	10.0	7.89		ug/L		79	70 - 135

10.0

10.7

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	79		42 - 142
4-Bromofluorobenzene (Surr)	101		54 - 114
Toluene-d8 (Surr)	100		61 - 125
Dibromofluoromethane (Surr)	108		60 - 150

Lab Sample ID: LCSD 180-370028/5

Matrix: Water

Dichlorobromomethane

Analysis Batch: 370028

Client Sample	ID: Lab	Contro	I Sample	Dup
		Prep T	vpe: Tota	I/NA

107

65 - 135

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	10.0		ug/L		100	75 - 125	2	20
1,1,2,2-Tetrachloroethane	10.0	5.48	*_	ug/L		55	60 - 140	0	20
1,1,2-Trichloroethane	10.0	8.65		ug/L		87	71 - 129	14	20
1,1-Dichloroethane	10.0	9.61		ug/L		96	73 - 127	2	20
1,1-Dichloroethene	10.0	9.35		ug/L		94	50 - 150	3	20
1,2-Dichloroethane	10.0	8.16		ug/L		82	70 - 130	14	20

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Page 17 of 27

Job ID: 180-126292-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 180-370028/5

Matrix: Water

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analysis Batch: 370028								•	
-	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,2-Dichloropropane	10.0	10.9		ug/L		109	35 - 150	11	20
1,2-Dichlorobenzene	10.0	8.10		ug/L		81	65 - 135	2	20
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	73 - 127	2	20
1,4-Dichlorobenzene	10.0	9.67		ug/L		97	65 - 135	1	20
2-Chloroethyl vinyl ether	20.0	10.5		ug/L		52	10 - 150	7	20
Acrolein	30.0	ND	*-	ug/L		46	60 - 140	15	20
Acrylonitrile	100	56.5	*_	ug/L		57	60 - 140	13	20
Benzene	10.0	10.8		ug/L		108	65 - 135	2	20
Bromoform	10.0	8.46		ug/L		85	71 - 129	4	20
Bromomethane	10.0	16.7	*+ *1	ug/L		167	15 - 150	23	20
Carbon disulfide	10.0	10.9		ug/L		109	44 - 150	10	20
Carbon tetrachloride	10.0	9.15		ug/L		92	73 - 127	5	20
Chlorobenzene	10.0	9.94		ug/L		99	66 - 134	3	20
Chloroform	10.0	10.7		ug/L		107	70 - 135	2	20
Chloromethane	10.0	6.47		ug/L		65	10 - 150	9	20
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	39 - 150	10	20
cis-1,3-Dichloropropene	10.0	13.4		ug/L		134	25 - 150	2	20
Ethylbenzene	10.0	10.1		ug/L		101	60 - 140	1	20
Methylene Chloride	10.0	10.9		ug/L		109	60 - 140	4	20
Tetrachloroethene	10.0	9.67		ug/L		97	74 - 126	1	20
Toluene	10.0	10.5		ug/L		105	75 - 125	1	20
trans-1,2-Dichloroethene	10.0	9.29		ug/L		93	70 - 130	1	20
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	50 - 150	3	20
Trichloroethene	10.0	9.03		ug/L		90	67 - 133	3	20
Vinyl chloride	10.0	8.01		ug/L		80	10 - 150	3	20
Dibromochloromethane	10.0	8.42		ug/L		84	70 - 135	6	20
Dichlorobromomethane	10.0	10.7		ug/L		107	65 - 135	0	20

LCSD LCSD

MR MR

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		42 - 142
4-Bromofluorobenzene (Surr)	100		54 - 114
Toluene-d8 (Surr)	104		61 - 125
Dibromofluoromethane (Surr)	114		60 - 150

Lab Sample ID: MB 180-370169/9

Matrix: Water

Analysis Batch: 370169

Client Sample ID: Method Blank Prep Type: Total/NA

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/03/21 13:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			09/03/21 13:49	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/03/21 13:49	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/03/21 13:49	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/03/21 13:49	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/03/21 13:49	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/03/21 13:49	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/03/21 13:49	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/03/21 13:49	1

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Page 18 of 27

Project/Site: Cytec Havre de Grace MD

Job ID: 180-126292-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-370169/9

Matrix: Water

Analysis Batch: 370169

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	MD		1.0	0.54	ug/L			09/03/21 13:49	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/03/21 13:49	1
Acrolein	ND		20	16	ug/L			09/03/21 13:49	1
Acrylonitrile	ND		20	7.8	ug/L			09/03/21 13:49	1
Benzene	ND		1.0	0.60	ug/L			09/03/21 13:49	1
Bromoform	ND		1.0	0.98	ug/L			09/03/21 13:49	1
Bromomethane	ND		1.0	0.89	ug/L			09/03/21 13:49	1
Carbon disulfide	ND		1.0	0.88	ug/L			09/03/21 13:49	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/03/21 13:49	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/03/21 13:49	1
Chloroform	ND		1.0	0.60	ug/L			09/03/21 13:49	1
Chloromethane	ND		1.0	0.90	ug/L			09/03/21 13:49	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/03/21 13:49	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/03/21 13:49	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/03/21 13:49	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/03/21 13:49	1
Tetrachloroethene	ND		1.0	0.47	ug/L			09/03/21 13:49	1
Toluene	ND		1.0	0.46	ug/L			09/03/21 13:49	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			09/03/21 13:49	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/03/21 13:49	1
Trichloroethene	ND		1.0	0.69	ug/L			09/03/21 13:49	1
Vinyl chloride	ND		1.0	0.40	ug/L			09/03/21 13:49	1
Dibromochloromethane	ND		1.0	0.84	ug/L			09/03/21 13:49	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/03/21 13:49	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	70		42 - 142		09/03/21 13:49	1
4-Bromofluorobenzene (Surr)	78		54 - 114		09/03/21 13:49	1
Toluene-d8 (Surr)	123		61 - 125		09/03/21 13:49	1
Dibromofluoromethane (Surr)	111		60 - 150		09/03/21 13:49	1

Lab Sample ID: LCS 180-370169/3

Matrix: Water

Analysis Batch: 370169

Client Sample ID: Lab Control Sample Prep Type: Total/NA

,	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	9.19		ug/L		92	75 - 125
1,1,2,2-Tetrachloroethane	10.0	5.75	*_	ug/L		58	60 - 140
1,1,2-Trichloroethane	10.0	8.87		ug/L		89	71 - 129
1,1-Dichloroethane	10.0	10.5		ug/L		105	73 - 127
1,1-Dichloroethene	10.0	7.65		ug/L		76	50 - 150
1,2-Dichloroethane	10.0	8.65		ug/L		87	70 - 130
1,2-Dichloropropane	10.0	12.3		ug/L		123	35 - 150
1,2-Dichlorobenzene	10.0	8.66		ug/L		87	65 - 135
1,3-Dichlorobenzene	10.0	9.87		ug/L		99	73 - 127
1,4-Dichlorobenzene	10.0	9.06		ug/L		91	65 - 135
2-Chloroethyl vinyl ether	20.0	12.6		ug/L		63	10 - 150
Acrolein	30.0	ND	*_	ug/L		3	60 - 140

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Page 19 of 27

Job ID: 180-126292-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-370169/3

Matrix: Water

Analysis Batch: 370169

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike LCS		LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acrylonitrile	100	61.4		ug/L		61	60 - 140
Benzene	10.0	11.3		ug/L		113	65 - 135
Bromoform	10.0	10.1		ug/L		101	71 - 129
Bromomethane	10.0	11.8		ug/L		118	15 - 150
Carbon disulfide	10.0	10.2		ug/L		102	44 - 150
Carbon tetrachloride	10.0	8.02		ug/L		80	73 - 127
Chlorobenzene	10.0	10.2		ug/L		102	66 - 134
Chloroform	10.0	11.3		ug/L		113	70 - 135
Chloromethane	10.0	6.17		ug/L		62	10 - 150
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	39 - 150
cis-1,3-Dichloropropene	10.0	13.2		ug/L		132	25 - 150
Ethylbenzene	10.0	9.35		ug/L		93	60 - 140
Methylene Chloride	10.0	14.0		ug/L		140	60 - 140
Tetrachloroethene	10.0	7.88		ug/L		79	74 - 126
Toluene	10.0	10.3		ug/L		103	75 - 125
trans-1,2-Dichloroethene	10.0	8.96		ug/L		90	70 - 130
trans-1,3-Dichloropropene	10.0	9.99		ug/L		100	50 - 150
Trichloroethene	10.0	10.1		ug/L		101	67 - 133
Vinyl chloride	10.0	6.46		ug/L		65	10 - 150
Dibromochloromethane	10.0	9.52		ug/L		95	70 - 135
Dichlorobromomethane	10.0	12.6		ug/L		126	65 - 135

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		42 - 142
4-Bromofluorobenzene (Surr)	100		54 - 114
Toluene-d8 (Surr)	98		61 - 125
Dibromofluoromethane (Surr)	118		60 - 150

Lab Sample ID: MB 180-370893/9

Matrix: Water

Analysis Batch: 370893

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

	IVID IVID						
Analyte	Result Qua	alifier RL	MDL Unit	t D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND ND	1.0	0.89 ug/L	<u> </u>		09/10/21 13:27	1
Vinyl chloride	ND	1.0	0.40 ug/L	L		09/10/21 13:27	1
	MB MB						

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	65		42 - 142		09/10/21 13:27	1
4-Bromofluorobenzene (Surr)	93		54 - 114		09/10/21 13:27	1
Toluene-d8 (Surr)	109		61 - 125		09/10/21 13:27	1
Dibromofluoromethane (Surr)	103		60 - 150		09/10/21 13:27	1

Lab Sample ID: LCS 180-370893/3

Matrix: Water

Analysis Batch: 3/0893								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methylene Chloride	10.0	10.2		ug/L		102	60 - 140	

Eurofins TestAmerica, Pittsburgh

Client Sample ID: Lab Control Sample

Page 20 of 27

QC Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-370893/3

Matrix: Water

Analysis Batch: 370893

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Vinyl chloride 10.0 8.28 ug/L 83 10 - 150

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	74		42 - 142
4-Bromofluorobenzene (Surr)	97		54 - 114
Toluene-d8 (Surr)	102		61 - 125
Dibromofluoromethane (Surr)	108		60 - 150

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-126292-1

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 370028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126292-1	EW-1 (082621)	Total/NA	Water	EPA 624	_
180-126292-2	EW-2 (082621)	Total/NA	Water	EPA 624	
180-126292-3	MW-10D (082621)	Total/NA	Water	EPA 624	
180-126292-4	COMBEFF(082621)	Total/NA	Water	EPA 624	
180-126292-5	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-370028/10	Method Blank	Total/NA	Water	EPA 624	
LCS 180-370028/3	Lab Control Sample	Total/NA	Water	EPA 624	
LCSD 180-370028/5	Lab Control Sample Dup	Total/NA	Water	EPA 624	

Analysis Batch: 370169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126292-1 - DL	EW-1 (082621)	Total/NA	Water	EPA 624	
180-126292-2 - DL	EW-2 (082621)	Total/NA	Water	EPA 624	
180-126292-4 - DL	COMBEFF(082621)	Total/NA	Water	EPA 624	
180-126292-5 - RA	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-370169/9	Method Blank	Total/NA	Water	EPA 624	
LCS 180-370169/3	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 370893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-126292-2 - DL2	EW-2 (082621)	Total/NA	Water	EPA 624	
MB 180-370893/9	Method Blank	Total/NA	Water	EPA 624	
LCS 180-370893/3	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Requested		fee may b
P Record Solution of the solu		Sample Disposal (A fee may be assessed if samples are retained by Lab
Sampler: A Wilcowsky Phone: 443 - 359 - 951 3 Butt, Veronica Bottoff TAT Requested (days): Lof Marix Type Soow#: Sample Date Time Sample Date Time Sample Date Time C=grab Preservation Code: Signal Supple Common Code: Signal Signal Supple Common Code: Signal Si	Water	Radiological
Sampler: LAT Requested: TAT Requested (days) Poject #:		Poison B 🕰 Unknown
TestAmerica Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Phone (412) 963-7058 Fax (412) 963-2468 Client Information Client Contact: Mis. Amanda Duegrits Tisting Company: ARCADIS U.S., Inc. Address: 7550 Teague Road Suite 210 City. Hanover State, Zip. Mb. 21076 Phone: Taste, Zip. Mb. 21076 Phone: Haverede Grace, Mb Site: Ew - I (0836.31) Ew Mw - IOD(0826.31) Ew Mw - IOD(0826.31) Ew Mw - IOD(0826.31) Ew Mw - IOD(0826.31) The State Tip.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Possible Hazard Identification Non-Hazard

Page 24 of 27

TestAmerica Pittsburgh		
Jul Alpha Drive RIDC Park Pittsburgh, PA 15238 Phone (412) 963-7058 Fax (412) 963-2468	Chain of Custody Record	cord
Client Information		
Ms. Amanda Duggins Turner	(2)	
Company: ARCADIS U.S., Inc.		veronica.bortot@testamericainc.com
Address: 7550 Teague Road Suite 210	Due Date Requested: 💘 기구 🌲	Analysis Requested
City: Hanover	TAT Requested (days): LOC M. L	
State, Zip: MD, 21076 Phone:	70075893 01	
410-923-7808(Tel)	F George Street Contractions	
Amanda. Dugeim®arcadis-us.com Proiect Name		(4
Haverede Grace, MD	Project #: 18017987	1 20
Circ	elgm	
	IBS b	S
	1010H	-
Sample Identification	Sample Date Time G=grap) Figure 2013	
7 - 7 - 7 - 7	Preservation Code:	
7,	8/06/31 1010 C water	
(日本) ひとやのなし	8/26/21 1015 G Water	
VOX.	8/26/21 1020 G Water	
SOUTH ON SOUTH	8/26/21 (075 G Water	
1. Slank	Water	7
	Water	
Possible Hazard Identification	Water	
ole Skin Irritant V, Other (specify)	Poison B Duknown Radiological	Sample Disposal (A fee may be assessed if samples are re-
Empty Kit Relinquished by:		Special Instructions/QC Requirements:
Relinduished by:	Date:	

Job Number: 180-126292-1

Login Number: 126292 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Creator. Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-127141-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan

Authorized for release by: 10/7/2021 5:39:54 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

Have a Question?



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	19
QC Association Summary	25
Chain of Custody	26
Receipt Checklists	27

4

Q

9

11

Case Narrative

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-127141-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-127141-1

Receipt

The samples were received on 9/16/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS VOA

The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: EW-1 (091521) (180-127141-1), EW-2 (091521) (180-127141-2), MW10D (091521) (180-127141-3), TRIP BLANK (180-127141-4) and EFFLUENT (091521) (180-127141-5). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Due to the concentration of target compounds detected, several samples were analyzed at a dilution. The reporting limits have been adjusted accordingly.

Samples EW-1 (091521) (180-127141-1), EW-2 (091521) (180-127141-2) and EFFLUENT (091521) (180-127141-5) had surrogates and/or internal standards not meet criteria. These samples were re-analyzed at a dilution and outside of the holding time. Both sets of data are reported.

Sample MW10D (091521) (180-127141-3) had surrogate Toluene-d8 recover outside of the control limits. This sample was re-analyzed outside of the holding time and again this surrogate recovered outside of the control limits confirming matrix interfernce. Both sets of data are repprted.

The laboratory control sample (LCS) for analytical batch 180-373269 recovered outside control limits for the following analytes: Acrolein, Acrylonitrile, Bromoform, Bromomethane, Carbon tetrachloride and Tetrachloroethene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-373862 recovered outside control limits for the following analytes: Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-374004 recovered outside control limits for the following analyte: Bromoform. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The continuing calibration verification (CCV) analyzed in 180-373269 was outside the method criteria for the following analyte(s): Carbon tetrachloride, Acrolein, Carbon tetrachloride, 1,1-Dichloroethene, Acrylonitrile, Tetrachloroethene, 1,1,1-Trichloroethane, Bromoform, trans-1,2-Dichloroethene and Bromomethane (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in 180-373862 was outside the method criteria for the following analyte(s): Bromoform (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-374004 was outside the method criteria for the following analyte: Bromoform. (HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Job ID: 180-127141-1

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Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*3	ISTD response or retention time outside acceptable limits.
E	Result exceeded calibration range.
Н	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

S1+	Surrogate recovery exceeds control limits, high biased.
Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE) MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA

MDC Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit ML Minimum Level (Dioxin) Most Probable Number MPN

Method Quantitation Limit

NC Not Calculated

MQL

Not Detected at the reporting limit (or MDL or EDL if shown) ND

NEG Negative / Absent POS Positive / Present

PQL **Practical Quantitation Limit**

PRES Presumptive QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date	
Arkansas DEQ	State	19-033-0	06-27-21 *	
California	State	2891	04-30-22	
Connecticut	State	PH-0688	09-30-22	
Florida	NELAP	E871008	06-30-22	
Georgia	State	PA 02-00416	04-30-22	
Illinois	NELAP	004375	06-30-22	
Kansas	NELAP	E-10350	01-31-22	
Kentucky (UST)	State	162013	04-30-22	
Kentucky (WW)	State	KY98043	12-31-21	
Louisiana	NELAP	04041	06-30-22	
Maine	State	PA00164	03-06-22	
Minnesota	NELAP	042-999-482	12-31-21	
Nevada	State	PA00164	08-31-22	
New Hampshire	NELAP	2030	04-05-22	
New Jersey	NELAP	PA005	06-30-22	
New York	NELAP	11182	04-01-22	
North Carolina (WW/SW)	State	434	12-31-21	
North Dakota	State	R-227	04-30-22	
Oregon	NELAP	PA-2151	02-06-22	
Pennsylvania	NELAP	02-00416	04-30-22	
Rhode Island	State	LAO00362	12-31-21	
South Carolina	State	89014	04-30-22	
Texas	NELAP	T104704528	03-31-22	
USDA	Federal	P-Soil-01	06-26-22	
USDA	US Federal Programs	P330-16-00211	06-26-22	
Utah	NELAP	PA001462019-8	05-31-22	
Virginia	NELAP	10043	09-15-22	
West Virginia DEP	State	142	01-31-22	
Wisconsin	State	998027800	08-31-22	

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 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	
180-127141-1	EW-1 (091521)	Water	09/15/21 11:10	09/16/21 09:30	
180-127141-2	EW-2 (091521)	Water	09/15/21 11:15	09/16/21 09:30	
180-127141-3	MW10D (091521)	Water	09/15/21 11:20	09/16/21 09:30	
180-127141-4	TRIP BLANK	Water	09/15/21 11:25	09/16/21 09:30	
180-127141-5	EFFLUENT (091521)	Water	09/15/21 00:00	09/16/21 09:30	

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Job ID: 180-127141-1

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Method Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

 Method
 Method Description
 Protocol
 Laboratory

 EPA 624
 Volatile Organic Compounds (GC/MS)
 EPA
 TAL PIT

_ |

Job ID: 180-127141-1

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Job ID: 180-127141-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-1 (091521)

Date Collected: 09/15/21 11:10 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-1

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624 at ID: CHHP6		1	5 mL	5 mL	373269	09/29/21 19:44	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624 at ID: CHHP6	DL	10	5 mL	5 mL	373862	10/05/21 01:52	C1K	TAL PIT

Client Sample ID: EW-2 (091521)

Date Collected: 09/15/21 11:15 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 nt ID: CHHP6		1	5 mL	5 mL	373269	09/29/21 20:13	C1K	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 nt ID: CHHP6	RADL	250	5 mL	5 mL	374004	10/06/21 00:22	PJJ	TAL PIT

Client Sample ID: MW10D (091521)

Date Collected: 09/15/21 11:20

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127141-3 **Matrix: Water**

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624 nt ID: CHHP6		1	5 mL	5 mL	373269	09/29/21 20:42	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624 nt ID: CHHP6	RA	1	5 mL	5 mL	373862	10/05/21 01:22	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624 nt ID: CHHP6	RA2	1	5 mL	5 mL	374004	10/05/21 22:53	PJJ	TAL PIT

Client Sample ID: TRIP BLANK

Date Collected: 09/15/21 11:25

Date Received: 09/16/21 09:30

Prep Type Total/NA	Batch Type Analysis	Batch Method EPA 624	Run	Dil Factor	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 373269	Prepared or Analyzed 09/29/21 15:49	Analyst C1K	Lab TAL PIT
	Instrumen	t ID: CHHP6								

Client Sample ID: EFFLUENT (091521)

Date Collected: 09/15/21 00:00

Date Received: 09/16/21 09:30

Prep Type Total/NA	Batch Type Analysis Instrumen	Batch Method EPA 624 t ID: CHHP6	Run	Dil Factor	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 373269	Prepared or Analyzed 09/29/21 21:12	Analyst C1K	Lab TAL PIT
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP6	RADL	50	5 mL	5 mL	374004	10/05/21 23:53	PJJ	TAL PIT

Eurofins TestAmerica, Pittsburgh

Page 8 of 27

Lab Sample ID: 180-127141-4 **Matrix: Water**

Lab Chronicle

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Analysis

C1K = Chamaiporn Krisorn
PJJ = Patrick Journet

Job ID: 180-127141-1

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Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-1 (091521)

Date Collected: 09/15/21 11:10 Date Received: 09/16/21 09:30

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Lab Sample ID: 180-127141-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD		1.0	0.60	ug/L			09/29/21 19:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			09/29/21 19:44	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/29/21 19:44	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/29/21 19:44	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/29/21 19:44	1
1,2-Dichloroethane	130	E	1.0	0.57	ug/L			09/29/21 19:44	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/29/21 19:44	1
1,2-Dichlorobenzene	ND	*3	1.0	0.36	ug/L			09/29/21 19:44	1
1,3-Dichlorobenzene	ND	*3	1.0	0.50	ug/L			09/29/21 19:44	1
1,4-Dichlorobenzene	ND	*3	1.0	0.54	ug/L			09/29/21 19:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/29/21 19:44	1
Acrolein	ND	*+	20	16	ug/L			09/29/21 19:44	1
Acrylonitrile	ND	*+	20	7.8	ug/L			09/29/21 19:44	1
Benzene	ND		1.0	0.60	ug/L			09/29/21 19:44	1
Bromoform	ND	*+	1.0	0.98	ug/L			09/29/21 19:44	1
Bromomethane	ND	*+	1.0	0.89	ug/L			09/29/21 19:44	1
Carbon disulfide	ND	*+	1.0	0.88	ug/L			09/29/21 19:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/29/21 19:44	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/29/21 19:44	1
Chloroform	ND		1.0	0.60	ug/L			09/29/21 19:44	1
Chloromethane	ND		1.0	0.90	ug/L			09/29/21 19:44	1
cis-1,2-Dichloroethene	2.1		1.0	0.71	ug/L			09/29/21 19:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/29/21 19:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/29/21 19:44	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/29/21 19:44	1
Tetrachloroethene	ND	*+	1.0	0.47	ug/L			09/29/21 19:44	1
Toluene	ND		1.0	0.46	ug/L			09/29/21 19:44	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			09/29/21 19:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/29/21 19:44	1
Trichloroethene	5.0		1.0	0.69	ug/L			09/29/21 19:44	1
Vinyl chloride	2.0		1.0	0.40	ug/L			09/29/21 19:44	1
Dibromochloromethane	ND		1.0	0.84	-			09/29/21 19:44	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/29/21 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		42 - 142					09/29/21 19:44	1

Method: EPA 624 - Volatile (Organic Comp	ounds (GC/I	MS) - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	10	6.0	ug/L			10/05/21 01:52	10
1,1,2,2-Tetrachloroethane	ND	Н	10	6.0	ug/L			10/05/21 01:52	10
1,1,2-Trichloroethane	ND	Н	10	4.5	ug/L			10/05/21 01:52	10
1,1-Dichloroethane	ND	Н	10	3.1	ug/L			10/05/21 01:52	10
1,1-Dichloroethene	ND	Н	10	5.5	ug/L			10/05/21 01:52	10
1,2-Dichloroethane	83	Н	10	5.7	ug/L			10/05/21 01:52	10
1,2-Dichloropropane	ND	Н	10	6.6	ug/L			10/05/21 01:52	10
1,2-Dichlorobenzene	ND	Н	10	3.6	ug/L			10/05/21 01:52	10

54 - 114

61 - 125

60 - 150

86

128

156 S1+

Eurofins TestAmerica, Pittsburgh

09/29/21 19:44

09/29/21 19:44

09/29/21 19:44

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-1 (091521)

Date Collected: 09/15/21 11:10 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127141-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	Н	10	5.0	ug/L			10/05/21 01:52	10
1,4-Dichlorobenzene	ND	Н	10	5.4	ug/L			10/05/21 01:52	10
2-Chloroethyl vinyl ether	ND	Н	20	17	ug/L			10/05/21 01:52	10
Acrolein	ND	Н	200	160	ug/L			10/05/21 01:52	10
Acrylonitrile	ND	Н	200	78	ug/L			10/05/21 01:52	10
Benzene	ND	Н	10	6.0	ug/L			10/05/21 01:52	10
Bromoform	ND	H *+	10	9.8	ug/L			10/05/21 01:52	10
Bromomethane	ND	Н	10	8.9	ug/L			10/05/21 01:52	10
Carbon disulfide	ND	Н	10	8.8	ug/L			10/05/21 01:52	10
Carbon tetrachloride	ND	Н	10	8.8	ug/L			10/05/21 01:52	10
Chlorobenzene	ND	Н	10	5.0	ug/L			10/05/21 01:52	10
Chloroform	ND	Н	10	6.0	ug/L			10/05/21 01:52	10
Chloromethane	ND	Н	10	9.0	ug/L			10/05/21 01:52	10
cis-1,2-Dichloroethene	ND	Н	10	7.1	ug/L			10/05/21 01:52	10
cis-1,3-Dichloropropene	ND	Н	10	5.9	ug/L			10/05/21 01:52	10
Ethylbenzene	ND	Н	10	5.1	ug/L			10/05/21 01:52	10
Methylene Chloride	ND	Н	10	8.9	ug/L			10/05/21 01:52	10
Tetrachloroethene	ND	Н	10	4.7	ug/L			10/05/21 01:52	10
Toluene	ND	Н	10	4.6	ug/L			10/05/21 01:52	10
trans-1,2-Dichloroethene	ND	Н	10	6.7	ug/L			10/05/21 01:52	10
trans-1,3-Dichloropropene	ND	Н	10	5.8	ug/L			10/05/21 01:52	10
Trichloroethene	ND	Н	10	6.9	ug/L			10/05/21 01:52	10
Vinyl chloride	ND	Н	10	4.0	ug/L			10/05/21 01:52	10
Dibromochloromethane	ND	Н	10	8.4	ug/L			10/05/21 01:52	10
Dichlorobromomethane	ND	Н	10	6.4	ug/L			10/05/21 01:52	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		42 - 142			- -		10/05/21 01:52	10
4-Bromofluorobenzene (Surr)	79		54 - 114					10/05/21 01:52	10
Toluene-d8 (Surr)	108		61 - 125					10/05/21 01:52	10

Client Sample ID: EW-2 (091521) Lab Sample ID: 180-127141-2 Date Collected: 09/15/21 11:15 **Matrix: Water**

60 - 150

124

Date Received: 09/16/21 09:30

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/29/21 20:13	1
1,1,2,2-Tetrachloroethane	ND	*3	1.0	0.60	ug/L			09/29/21 20:13	1
1,1,2-Trichloroethane	9.6	*3	1.0	0.45	ug/L			09/29/21 20:13	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/29/21 20:13	1
1,1-Dichloroethene	0.81	J	1.0	0.55	ug/L			09/29/21 20:13	1
1,2-Dichloroethane	1400	E	1.0	0.57	ug/L			09/29/21 20:13	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/29/21 20:13	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/29/21 20:13	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/29/21 20:13	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/29/21 20:13	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/29/21 20:13	1
Acrolein	ND	*+	20	16	ug/L			09/29/21 20:13	1

Eurofins TestAmerica, Pittsburgh

10/05/21 01:52

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-2 (091521)

Date Collected: 09/15/21 11:15 Date Received: 09/16/21 09:30

Dibromofluoromethane (Surr)

Lab Sample ID: 180-127141-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND	*+	20	7.8	ug/L			09/29/21 20:13	1
Benzene	ND		1.0	0.60	ug/L			09/29/21 20:13	1
Bromoform	ND	*3 *+	1.0	0.98	ug/L			09/29/21 20:13	1
Bromomethane	ND	*+	1.0	0.89	ug/L			09/29/21 20:13	1
Carbon disulfide	1.2	*+	1.0	0.88	ug/L			09/29/21 20:13	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/29/21 20:13	1
Chlorobenzene	ND	*3	1.0	0.50	ug/L			09/29/21 20:13	1
Chloroform	0.61	J	1.0	0.60	ug/L			09/29/21 20:13	1
Chloromethane	ND		1.0	0.90	ug/L			09/29/21 20:13	1
cis-1,2-Dichloroethene	18		1.0	0.71	ug/L			09/29/21 20:13	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/29/21 20:13	1
Ethylbenzene	ND	*3	1.0	0.51	ug/L			09/29/21 20:13	1
Methylene Chloride	2900	E	1.0	0.89	ug/L			09/29/21 20:13	1
Tetrachloroethene	0.92	J *3 *+	1.0	0.47	ug/L			09/29/21 20:13	1
Toluene	ND	*3	1.0	0.46	ug/L			09/29/21 20:13	1
trans-1,2-Dichloroethene	2.8		1.0	0.67	ug/L			09/29/21 20:13	1
trans-1,3-Dichloropropene	ND	*3	1.0	0.58	ug/L			09/29/21 20:13	1
Trichloroethene	7.5		1.0	0.69	ug/L			09/29/21 20:13	1
Vinyl chloride	49		1.0	0.40	ug/L			09/29/21 20:13	1
Dibromochloromethane	ND	*3	1.0	0.84	ug/L			09/29/21 20:13	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/29/21 20:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		42 - 142			•		09/29/21 20:13	1
4-Bromofluorobenzene (Surr)	88	*3	54 - 114					09/29/21 20:13	1
Toluene-d8 (Surr)	112	*3	61 - 125					09/29/21 20:13	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	250	150	ug/L			10/06/21 00:22	250
1,1,2,2-Tetrachloroethane	ND	Н	250	150	ug/L			10/06/21 00:22	250
1,1,2-Trichloroethane	ND	Н	250	110	ug/L			10/06/21 00:22	250
1,1-Dichloroethane	ND	Н	250	77	ug/L			10/06/21 00:22	250
1,1-Dichloroethene	ND	Н	250	140	ug/L			10/06/21 00:22	250
1,2-Dichloroethane	1800	Н	250	140	ug/L			10/06/21 00:22	250
1,2-Dichloropropane	ND	Н	250	160	ug/L			10/06/21 00:22	250
1,2-Dichlorobenzene	ND	Н	250	91	ug/L			10/06/21 00:22	250
1,3-Dichlorobenzene	ND	Н	250	130	ug/L			10/06/21 00:22	250
1,4-Dichlorobenzene	ND	Н	250	140	ug/L			10/06/21 00:22	250
2-Chloroethyl vinyl ether	ND	Н	500	430	ug/L			10/06/21 00:22	250
Acrolein	ND	Н	5000	4000	ug/L			10/06/21 00:22	250
Acrylonitrile	ND	Н	5000	2000	ug/L			10/06/21 00:22	250
Benzene	ND	Н	250	150	ug/L			10/06/21 00:22	250
Bromoform	ND	H *+	250	240	ug/L			10/06/21 00:22	250
Bromomethane	ND	Н	250	220	ug/L			10/06/21 00:22	250
Carbon disulfide	ND	Н	250	220	ug/L			10/06/21 00:22	250
Carbon tetrachloride	ND	Н	250	220	ug/L			10/06/21 00:22	250
Chlorobenzene	ND	Н	250	130	ug/L			10/06/21 00:22	250
Chloroform	ND	Н	250	150	ug/L			10/06/21 00:22	250

60 - 150

126

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09/29/21 20:13

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1 Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-2 (091521)

Lab Sample ID: 180-127141-2 Date Collected: 09/15/21 11:15 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND	H	250	220	ug/L			10/06/21 00:22	250
cis-1,2-Dichloroethene	ND	Н	250	180	ug/L			10/06/21 00:22	250
cis-1,3-Dichloropropene	ND	Н	250	150	ug/L			10/06/21 00:22	250
Ethylbenzene	ND	Н	250	130	ug/L			10/06/21 00:22	250
Methylene Chloride	3200	Н	250	220	ug/L			10/06/21 00:22	250
Tetrachloroethene	ND	Н	250	120	ug/L			10/06/21 00:22	250
Toluene	ND	Н	250	110	ug/L			10/06/21 00:22	250
trans-1,2-Dichloroethene	ND	Н	250	170	ug/L			10/06/21 00:22	250
trans-1,3-Dichloropropene	ND	Н	250	150	ug/L			10/06/21 00:22	250
Trichloroethene	ND	Н	250	170	ug/L			10/06/21 00:22	250
Vinyl chloride	ND	Н	250	100	ug/L			10/06/21 00:22	250
Dibromochloromethane	ND	Н	250	210	ug/L			10/06/21 00:22	250
Dichlorobromomethane	ND	Н	250	160	ug/L			10/06/21 00:22	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		42 - 142			-		10/06/21 00:22	250
4-Bromofluorobenzene (Surr)	63		54 - 114					10/06/21 00:22	250
Toluene-d8 (Surr)	83		61 - 125					10/06/21 00:22	250
Dibromofluoromethane (Surr)	111		60 - 150					10/06/21 00:22	250

Client Sample ID: MW10D (091521) Lab Sample ID: 180-127141-3 Date Collected: 09/15/21 11:20 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/29/21 20:42	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			09/29/21 20:42	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/29/21 20:42	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/29/21 20:42	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/29/21 20:42	1
1,2-Dichloroethane	3.8		1.0	0.57	ug/L			09/29/21 20:42	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/29/21 20:42	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/29/21 20:42	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/29/21 20:42	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/29/21 20:42	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/29/21 20:42	1
Acrolein	ND	*+	20	16	ug/L			09/29/21 20:42	1
Acrylonitrile	ND	*+	20	7.8	ug/L			09/29/21 20:42	1
Benzene	ND		1.0	0.60	ug/L			09/29/21 20:42	1
Bromoform	ND	*+	1.0	0.98	ug/L			09/29/21 20:42	1
Bromomethane	ND	*+	1.0	0.89	ug/L			09/29/21 20:42	1
Carbon disulfide	1.1	*+	1.0	0.88	ug/L			09/29/21 20:42	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/29/21 20:42	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/29/21 20:42	1
Chloroform	ND		1.0	0.60	ug/L			09/29/21 20:42	1
Chloromethane	ND		1.0	0.90	ug/L			09/29/21 20:42	1
cis-1,2-Dichloroethene	2.4		1.0	0.71	ug/L			09/29/21 20:42	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/29/21 20:42	1
Ethylbenzene	ND		1.0	0.51				09/29/21 20:42	1

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Page 13 of 27

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW10D (091521)

Date Collected: 09/15/21 11:20 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	3.3		1.0	0.89	ug/L			09/29/21 20:42	1
Tetrachloroethene	ND	*+	1.0	0.47	ug/L			09/29/21 20:42	1
Toluene	ND		1.0	0.46	ug/L			09/29/21 20:42	1
trans-1,2-Dichloroethene	1.2		1.0	0.67	ug/L			09/29/21 20:42	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/29/21 20:42	1
Trichloroethene	1.7		1.0	0.69	ug/L			09/29/21 20:42	1
Vinyl chloride	1.3		1.0	0.40	ug/L			09/29/21 20:42	1
Dibromochloromethane	ND		1.0	0.84	ug/L			09/29/21 20:42	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/29/21 20:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		42 - 142			-		09/29/21 20:42	1
4-Bromofluorobenzene (Surr)	81		54 - 114					09/29/21 20:42	1
Toluene-d8 (Surr)	136	S1+	61 - 125					09/29/21 20:42	1
Dibromofluoromethane (Surr)	120		60 - 150					09/29/21 20:42	1

-	720		00 - 700					00/20/21 20.12	,
Method: EPA 624 - Volatile C		oounds (G Qualifier	C/MS) - RA RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60				10/05/21 01:22	1
1,1,2,2-Tetrachloroethane	ND	Н	1.0	0.60	ug/L			10/05/21 01:22	1
1,1,2-Trichloroethane	ND	Н	1.0	0.45	-			10/05/21 01:22	1
1,1-Dichloroethane	ND	Н	1.0		ug/L			10/05/21 01:22	1
1,1-Dichloroethene	ND	Н	1.0	0.55	-			10/05/21 01:22	1
1,2-Dichloroethane	1.0	Н	1.0	0.57	ug/L			10/05/21 01:22	1
1,2-Dichloropropane	ND	Н	1.0	0.66				10/05/21 01:22	1
1,2-Dichlorobenzene	ND	Н	1.0	0.36	-			10/05/21 01:22	1
1,3-Dichlorobenzene	ND	Н	1.0	0.50	-			10/05/21 01:22	1
1,4-Dichlorobenzene	ND	Н	1.0	0.54				10/05/21 01:22	1
2-Chloroethyl vinyl ether	ND	Н	2.0		ug/L			10/05/21 01:22	1
Acrolein	ND	Н	20		ug/L			10/05/21 01:22	1
Acrylonitrile	ND	Н	20		ug/L			10/05/21 01:22	1
Benzene	ND	Н	1.0	0.60	-			10/05/21 01:22	1
Bromoform	ND	H *+	1.0	0.98	-			10/05/21 01:22	1
Bromomethane	ND	Н	1.0	0.89	ug/L			10/05/21 01:22	1
Carbon disulfide	ND	Н	1.0	0.88	ug/L			10/05/21 01:22	1
Carbon tetrachloride	ND	Н	1.0	0.88	ug/L			10/05/21 01:22	1
Chlorobenzene	ND	Н	1.0	0.50	ug/L			10/05/21 01:22	1
Chloroform	ND	Н	1.0	0.60	-			10/05/21 01:22	1
Chloromethane	ND	Н	1.0	0.90	-			10/05/21 01:22	1
cis-1,2-Dichloroethene	2.0		1.0	0.71				10/05/21 01:22	1
cis-1,3-Dichloropropene	ND	Н	1.0	0.59	-			10/05/21 01:22	1
Ethylbenzene	ND	Н	1.0	0.51	ug/L			10/05/21 01:22	1
Methylene Chloride	ND	Н	1.0	0.89				10/05/21 01:22	1
Tetrachloroethene	ND	Н	1.0	0.47	-			10/05/21 01:22	1
Toluene	ND	Н	1.0	0.46	ug/L			10/05/21 01:22	1
trans-1,2-Dichloroethene	1.2	н	1.0	0.67	ug/L			10/05/21 01:22	1
trans-1,3-Dichloropropene	ND		1.0	0.58	-			10/05/21 01:22	1
Trichloroethene	1.6		1.0	0.69	•			10/05/21 01:22	1
Vinyl chloride	1.2		1.0	0.40				10/05/21 01:22	1
Dibromochloromethane	ND		1.0	0.84				10/05/21 01:22	1

Eurofins TestAmerica, Pittsburgh

10/7/2021

Page 14 of 27

6

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6

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9

11

12

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Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW10D (091521)

Date Collected: 09/15/21 11:20 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND	Н	1.0	0.64	ug/L			10/05/21 01:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	70		42 - 142					10/05/21 01:22	1
4-Bromofluorobenzene (Surr)	74		54 - 114					10/05/21 01:22	1
Toluene-d8 (Surr)	133	S1+	61 - 125					10/05/21 01:22	1
Dibromofluoromethane (Surr)	111		60 - 150					10/05/21 01:22	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	Н	1.0	0.60	ug/L			10/05/21 22:53	1
1,1,2,2-Tetrachloroethane	ND	Н	1.0	0.60	ug/L			10/05/21 22:53	1
1,1,2-Trichloroethane	ND	Н	1.0	0.45	ug/L			10/05/21 22:53	1
1,1-Dichloroethane	ND	Н	1.0	0.31	ug/L			10/05/21 22:53	1
1,1-Dichloroethene	ND	Н	1.0	0.55	ug/L			10/05/21 22:53	1
1,2-Dichloroethane	ND	Н	1.0	0.57	ug/L			10/05/21 22:53	1
1,2-Dichloropropane	ND	Н	1.0	0.66	ug/L			10/05/21 22:53	1
1,2-Dichlorobenzene	ND	Н	1.0	0.36	ug/L			10/05/21 22:53	1
1,3-Dichlorobenzene	ND	Н	1.0	0.50	ug/L			10/05/21 22:53	1
1,4-Dichlorobenzene	ND	Н	1.0	0.54	ug/L			10/05/21 22:53	1
2-Chloroethyl vinyl ether	ND	Н	2.0	1.7	ug/L			10/05/21 22:53	1
Acrolein	ND	Н	20	16	ug/L			10/05/21 22:53	1
Acrylonitrile	ND	Н	20	7.8	ug/L			10/05/21 22:53	1
Benzene	ND	Н	1.0	0.60	ug/L			10/05/21 22:53	1
Bromoform	ND	H *+	1.0	0.98	ug/L			10/05/21 22:53	1
Bromomethane	ND	Н	1.0	0.89	ug/L			10/05/21 22:53	1
Carbon disulfide	ND	Н	1.0	0.88	ug/L			10/05/21 22:53	1
Carbon tetrachloride	ND	Н	1.0	0.88	ug/L			10/05/21 22:53	1
Chlorobenzene	ND	Н	1.0	0.50	ug/L			10/05/21 22:53	1
Chloroform	ND	Н	1.0	0.60	ug/L			10/05/21 22:53	1
Chloromethane	ND	Н	1.0	0.90	ug/L			10/05/21 22:53	1
cis-1,2-Dichloroethene	ND	Н	1.0	0.71	ug/L			10/05/21 22:53	1
cis-1,3-Dichloropropene	ND	Н	1.0	0.59	ug/L			10/05/21 22:53	1
Ethylbenzene	ND	Н	1.0	0.51	ug/L			10/05/21 22:53	1
Methylene Chloride	ND	Н	1.0	0.89	ug/L			10/05/21 22:53	1
Tetrachloroethene	ND	Н	1.0	0.47	ug/L			10/05/21 22:53	1
Toluene	ND	Н	1.0	0.46	ug/L			10/05/21 22:53	1
trans-1,2-Dichloroethene	ND	Н	1.0	0.67	ug/L			10/05/21 22:53	1
trans-1,3-Dichloropropene	ND	Н	1.0	0.58				10/05/21 22:53	1
Trichloroethene	ND	Н	1.0	0.69				10/05/21 22:53	1
Vinyl chloride	ND	Н	1.0	0.40	ug/L			10/05/21 22:53	1
Dibromochloromethane	ND	Н	1.0	0.84				10/05/21 22:53	1
Dichlorobromomethane	ND	Н	1.0	0.64	-			10/05/21 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		42 - 142		10/05/21 22:53	1
4-Bromofluorobenzene (Surr)	76		54 - 114		10/05/21 22:53	1
Toluene-d8 (Surr)	103		61 - 125		10/05/21 22:53	1
Dibromofluoromethane (Surr)	126		60 - 150		10/05/21 22:53	1

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10/7/2021

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Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Oliver Overvier ID. TDID DI ANIX

Client Sample ID: TRIP BLANK

Date Collected: 09/15/21 11:25 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/29/21 15:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			09/29/21 15:49	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/29/21 15:49	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/29/21 15:49	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/29/21 15:49	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/29/21 15:49	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/29/21 15:49	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/29/21 15:49	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/29/21 15:49	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/29/21 15:49	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/29/21 15:49	1
Acrolein	ND	*+	20	16	ug/L			09/29/21 15:49	1
Acrylonitrile	ND	*+	20	7.8	ug/L			09/29/21 15:49	1
Benzene	ND		1.0	0.60	ug/L			09/29/21 15:49	1
Bromoform	ND	*+	1.0	0.98	ug/L			09/29/21 15:49	1
Bromomethane	ND	*+	1.0	0.89	ug/L			09/29/21 15:49	1
Carbon disulfide	ND	*+	1.0	0.88	ug/L			09/29/21 15:49	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/29/21 15:49	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/29/21 15:49	1
Chloroform	ND		1.0	0.60	ug/L			09/29/21 15:49	1
Chloromethane	ND		1.0	0.90	ug/L			09/29/21 15:49	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/29/21 15:49	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/29/21 15:49	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/29/21 15:49	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/29/21 15:49	1
Tetrachloroethene	ND	*+	1.0	0.47	ug/L			09/29/21 15:49	1
Toluene	ND		1.0	0.46	ug/L			09/29/21 15:49	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			09/29/21 15:49	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/29/21 15:49	1
Trichloroethene	ND		1.0	0.69	ug/L			09/29/21 15:49	1
Vinyl chloride	ND		1.0	0.40	ug/L			09/29/21 15:49	1
Dibromochloromethane	ND		1.0	0.84	ug/L			09/29/21 15:49	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/29/21 15:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		42 - 142			-		09/29/21 15:49	1
4-Bromofluorobenzene (Surr)	86		54 - 114					09/29/21 15:49	1
Toluene-d8 (Surr)	102		61 - 125					09/29/21 15:49	1
Dibromofluoromethane (Surr)	131		60 - 150					09/29/21 15:49	1

Client Sample ID: EFFLUENT (091521)

Date Collected: 09/15/21 00:00

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127141-5

Matrix: Water

Method: EPA 624 - Volatil	e Organic Compo	unds (GC/MS)							
Analyte	Result Q	ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND		1.0	0.60	ug/L			09/29/21 21:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			09/29/21 21:12	1
1,1,2-Trichloroethane	1.3		1.0	0.45	ug/L			09/29/21 21:12	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			09/29/21 21:12	1

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EFFLUENT (091521)

Date Collected: 09/15/21 00:00 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127141-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.55	ug/L			09/29/21 21:12	1
1,2-Dichloroethane	410	E	1.0	0.57	ug/L			09/29/21 21:12	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			09/29/21 21:12	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			09/29/21 21:12	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/29/21 21:12	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			09/29/21 21:12	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			09/29/21 21:12	1
Acrolein	ND	*+	20	16	ug/L			09/29/21 21:12	1
Acrylonitrile	ND	*+	20	7.8	ug/L			09/29/21 21:12	1
Benzene	ND		1.0	0.60	ug/L			09/29/21 21:12	1
Bromoform	ND	*+	1.0	0.98	ug/L			09/29/21 21:12	1
Bromomethane	ND	*+	1.0	0.89	ug/L			09/29/21 21:12	1
Carbon disulfide	1.5	*+	1.0	0.88	ug/L			09/29/21 21:12	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			09/29/21 21:12	1
Chlorobenzene	ND		1.0	0.50	ug/L			09/29/21 21:12	1
Chloroform	ND		1.0	0.60	ug/L			09/29/21 21:12	1
Chloromethane	ND		1.0	0.90	ug/L			09/29/21 21:12	1
cis-1,2-Dichloroethene	4.4		1.0	0.71	ug/L			09/29/21 21:12	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			09/29/21 21:12	1
Ethylbenzene	ND		1.0	0.51	ug/L			09/29/21 21:12	1
Methylene Chloride	740	E	1.0	0.89	ug/L			09/29/21 21:12	1
Tetrachloroethene	ND	*+	1.0	0.47	ug/L			09/29/21 21:12	1
Toluene	ND		1.0	0.46	ug/L			09/29/21 21:12	1
trans-1,2-Dichloroethene	1.6		1.0	0.67	ug/L			09/29/21 21:12	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			09/29/21 21:12	1
Trichloroethene	3.3		1.0	0.69	ug/L			09/29/21 21:12	1
Vinyl chloride	11		1.0	0.40	ug/L			09/29/21 21:12	1
Dibromochloromethane	ND		1.0	0.84	ug/L			09/29/21 21:12	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			09/29/21 21:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	78		42 - 142					09/29/21 21:12	1
4-Bromofluorobenzene (Surr)	78		54 - 114					09/29/21 21:12	1
Toluene-d8 (Surr)	131	S1+	61 - 125					09/29/21 21:12	1
Dibromofluoromethane (Surr)	117		60 - 150					09/29/21 21:12	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	H	50	30	ug/L			10/05/21 23:53	50
1,1,2,2-Tetrachloroethane	ND	Н	50	30	ug/L			10/05/21 23:53	50
1,1,2-Trichloroethane	ND	Н	50	23	ug/L			10/05/21 23:53	50
1,1-Dichloroethane	ND	Н	50	15	ug/L			10/05/21 23:53	50
1,1-Dichloroethene	ND	Н	50	28	ug/L			10/05/21 23:53	50
1,2-Dichloroethane	600	Н	50	29	ug/L			10/05/21 23:53	50
1,2-Dichloropropane	ND	Н	50	33	ug/L			10/05/21 23:53	50
1,2-Dichlorobenzene	ND	Н	50	18	ug/L			10/05/21 23:53	50
1,3-Dichlorobenzene	ND	Н	50	25	ug/L			10/05/21 23:53	50
1,4-Dichlorobenzene	ND	Н	50	27	ug/L			10/05/21 23:53	50
2-Chloroethyl vinyl ether	ND	Н	100	86	ug/L			10/05/21 23:53	50
Acrolein	ND	Н	1000	800	ug/L			10/05/21 23:53	50

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: ARCADIS U.S., Inc.

Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EFFLUENT (091521)

Date Collected: 09/15/21 00:00

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127141-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND	Н	1000	390	ug/L			10/05/21 23:53	50
Benzene	ND	Н	50	30	ug/L			10/05/21 23:53	50
Bromoform	ND	H *+	50	49	ug/L			10/05/21 23:53	50
Bromomethane	ND	Н	50	44	ug/L			10/05/21 23:53	50
Carbon disulfide	ND	Н	50	44	ug/L			10/05/21 23:53	50
Carbon tetrachloride	ND	Н	50	44	ug/L			10/05/21 23:53	50
Chlorobenzene	ND	Н	50	25	ug/L			10/05/21 23:53	50
Chloroform	ND	Н	50	30	ug/L			10/05/21 23:53	50
Chloromethane	ND	Н	50	45	ug/L			10/05/21 23:53	50
cis-1,2-Dichloroethene	ND	Н	50	35	ug/L			10/05/21 23:53	50
cis-1,3-Dichloropropene	ND	Н	50	30	ug/L			10/05/21 23:53	50
Ethylbenzene	ND	Н	50	25	ug/L			10/05/21 23:53	50
Methylene Chloride	ND	Н	50	44	ug/L			10/05/21 23:53	50
Tetrachloroethene	ND	Н	50	23	ug/L			10/05/21 23:53	50
Toluene	ND	Н	50	23	ug/L			10/05/21 23:53	50
trans-1,2-Dichloroethene	ND	Н	50	34	ug/L			10/05/21 23:53	50
trans-1,3-Dichloropropene	ND	Н	50	29	ug/L			10/05/21 23:53	50
Trichloroethene	ND	Н	50	34	ug/L			10/05/21 23:53	50
Vinyl chloride	ND	Н	50	20	ug/L			10/05/21 23:53	50
Dibromochloromethane	ND	Н	50	42	ug/L			10/05/21 23:53	50
Dichlorobromomethane	ND	Н	50	32	ug/L			10/05/21 23:53	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		42 - 142					10/05/21 23:53	50
4-Bromofluorobenzene (Surr)	83		54 - 114					10/05/21 23:53	50
Toluene-d8 (Surr)	107		61 - 125					10/05/21 23:53	50
Dibromofluoromethane (Surr)	133		60 - 150					10/05/21 23:53	50

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Client: ARCADIS U.S., Inc. Job ID: 180-127141-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-373269/13

Matrix: Water

Analysis Batch: 373269

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB Result Qualifier RL **MDL** Unit Dil Fac Analyte D Prepared Analyzed 1,1,1-Trichloroethane ND 1.0 0.60 ug/L 09/29/21 15:13 1,1,2,2-Tetrachloroethane ND 1.0 0.60 ug/L 09/29/21 15:13 1,1,2-Trichloroethane ND 1.0 0.45 ug/L 09/29/21 15:13 1,1-Dichloroethane ND 1.0 0.31 ug/L 09/29/21 15:13 0.55 ug/L 1 1-Dichloroethene ND 1.0 09/29/21 15:13 ND 1,2-Dichloroethane 1.0 0.57 ug/L 09/29/21 15:13 ND 1.0 1,2-Dichloropropane 0.66 ug/L 09/29/21 15:13 1,2-Dichlorobenzene ND 1.0 0.36 ug/L 09/29/21 15:13 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 09/29/21 15:13 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 09/29/21 15:13 ND 2-Chloroethyl vinyl ether 2.0 1.7 ug/L 09/29/21 15:13 Acrolein ND 20 16 ug/L 09/29/21 15:13 Acrylonitrile ND 20 7.8 ug/L 09/29/21 15:13 Benzene ND 1.0 0.60 ug/L 09/29/21 15:13 Bromoform ND 1.0 0.98 ug/L 09/29/21 15:13 Bromomethane ND 0.89 ug/L 1.0 09/29/21 15:13 Carbon disulfide ND 1.0 0.88 ug/L 09/29/21 15:13 Carbon tetrachloride 0.88 ug/L ND 09/29/21 15:13 1.0 Chlorobenzene ND 1.0 0.50 ug/L 09/29/21 15:13 Chloroform ND 1.0 0.60 ug/L 09/29/21 15:13 Chloromethane 0.90 ug/L 09/29/21 15:13 ND 1.0 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 09/29/21 15:13 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 09/29/21 15:13 ND 1.0 09/29/21 15:13 Ethylbenzene 0.51 ug/L Methylene Chloride ND 1.0 0.89 ug/L 09/29/21 15:13 Tetrachloroethene ND 1.0 0.47 ug/L 09/29/21 15:13 Toluene ND 1.0 0.46 ug/L 09/29/21 15:13 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 09/29/21 15:13 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 09/29/21 15:13 Trichloroethene ND 1.0 0.69 ug/L 09/29/21 15:13 Vinyl chloride ND 0.40 ug/L 1.0 09/29/21 15:13 Dibromochloromethane ND 1.0 0.84 ug/L 09/29/21 15:13 Dichlorobromomethane NΠ 1.0 0.64 ug/L 09/29/21 15:13

MD MD

	IVID IVID					
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	107	42 - 142		09/29/21 15:13	1	
4-Bromofluorobenzene (Surr)	83	54 - 114		09/29/21 15:13	1	
Toluene-d8 (Surr)	99	61 - 125		09/29/21 15:13	1	
Dibromofluoromethane (Surr)	124	60 - 150		09/29/21 15:13	1	

Lab Sample ID: LCS 180-373269/8

Matrix: Water

Analysis Batch: 373269

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	12.3		ug/L		123	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	11.9		ug/L		119	60 - 140	
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	71 - 129	

Eurofins TestAmerica, Pittsburgh

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Page 19 of 27

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-127141-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-373269/8

Matrix: Water

Analysis Batch: 373269

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1,1-Dichloroethane 10.0 10.9 109 73 - 127 ug/L ug/L 1,1-Dichloroethene 10.0 14.4 144 50 - 150 1,2-Dichloroethane 10.0 8.25 ug/L 83 70 - 130 1,2-Dichloropropane 10.0 10.1 ug/L 101 35 - 150ug/L 10.0 9.70 97 65 - 135 1,2-Dichlorobenzene 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 73 - 127 1,4-Dichlorobenzene 10.0 9.86 ug/L 99 65 - 135 2-Chloroethyl vinyl ether 20.0 12.0 ug/L 60 10 - 150 Acrolein 30.0 94.0 E*+ ug/L 313 60 - 140Acrylonitrile 100 155 155 ug/L 60 - 140 Benzene 10.0 127 12.7 ug/L 65 - 135 Bromoform 10.0 15.7 *+ ug/L 157 71 - 129 Bromomethane 10.0 33.6 *+ 336 15 - 150 ug/L Carbon disulfide 10.0 44 - 150 17.7 *+ ug/L 177 Carbon tetrachloride 10.0 12.5 ug/L 125 73 - 127 10.0 Chlorobenzene 10.8 ug/L 108 66 - 134Chloroform 10.0 11.4 114 70 - 135 ug/L Chloromethane 10.0 9.89 99 ug/L 10 - 150 cis-1,2-Dichloroethene 10.0 11.3 ug/L 113 39 - 150 ug/L cis-1,3-Dichloropropene 10.0 131 25 - 150 13.1 Ethylbenzene 10.0 11.5 ug/L 115 60 - 140 Methylene Chloride 10.0 12.5 ug/L 125 60 - 140Tetrachloroethene 10.0 13.9 *+ ug/L 139 74 - 126

10.0

10.0

10.0

10.0

10.0

10.0

10.0

12.4

12.7

12.5

11.2

12.7

10.9

10.6

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		42 - 142
4-Bromofluorobenzene (Surr)	91		54 - 114
Toluene-d8 (Surr)	110		61 - 125
Dibromofluoromethane (Surr)	108		60 - 150

Lab Sample ID: MB 180-373862/31

Matrix: Water

Toluene

Trichloroethene

Vinyl chloride

trans-1,2-Dichloroethene

Dibromochloromethane

Dichlorobromomethane

trans-1,3-Dichloropropene

Analysis Batch: 373862

Client Sample ID: Method Blank

124

127

125

112

127

109

106

75 - 125

70 - 130

50 - 150

67 - 133

10 - 150

70 - 135

65 - 135

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			10/05/21 00:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			10/05/21 00:53	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			10/05/21 00:53	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			10/05/21 00:53	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			10/05/21 00:53	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			10/05/21 00:53	1

Eurofins TestAmerica, Pittsburgh

Page 20 of 27

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-373862/31

Matrix: Water

Analysis Batch: 373862

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.0	0.66	ug/L			10/05/21 00:53	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			10/05/21 00:53	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			10/05/21 00:53	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			10/05/21 00:53	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			10/05/21 00:53	1
Acrolein	ND		20	16	ug/L			10/05/21 00:53	1
Acrylonitrile	ND		20	7.8	ug/L			10/05/21 00:53	1
Benzene	ND		1.0	0.60	ug/L			10/05/21 00:53	1
Bromoform	ND		1.0	0.98	ug/L			10/05/21 00:53	1
Bromomethane	ND		1.0	0.89	ug/L			10/05/21 00:53	1
Carbon disulfide	ND		1.0	0.88	ug/L			10/05/21 00:53	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			10/05/21 00:53	1
Chlorobenzene	ND		1.0	0.50	ug/L			10/05/21 00:53	1
Chloroform	ND		1.0	0.60	ug/L			10/05/21 00:53	1
Chloromethane	ND		1.0	0.90	ug/L			10/05/21 00:53	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			10/05/21 00:53	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			10/05/21 00:53	1
Ethylbenzene	ND		1.0	0.51	ug/L			10/05/21 00:53	1
Methylene Chloride	ND		1.0	0.89	ug/L			10/05/21 00:53	1
Tetrachloroethene	ND		1.0	0.47	ug/L			10/05/21 00:53	1
Toluene	ND		1.0	0.46	ug/L			10/05/21 00:53	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			10/05/21 00:53	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			10/05/21 00:53	1
Trichloroethene	ND		1.0	0.69	ug/L			10/05/21 00:53	1
Vinyl chloride	ND		1.0	0.40	ug/L			10/05/21 00:53	1
Dibromochloromethane	ND		1.0	0.84	ug/L			10/05/21 00:53	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			10/05/21 00:53	1
	MD	MD							

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		42 - 142	10/05/21 00:5	3 1
4-Bromofluorobenzene (Surr)	76		54 - 114	10/05/21 00:5	3 1
Toluene-d8 (Surr)	105		61 - 125	10/05/21 00:5	3 1
Dibromofluoromethane (Surr)	125		60 - 150	10/05/21 00:5	3 1

Lab Sample ID: LCS 180-373862/3

Matrix: Water

Analysis Batch: 373862

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	12.0		ug/L		120	60 - 140	
1,1,2-Trichloroethane	10.0	11.9		ug/L		119	71 - 129	
1,1-Dichloroethane	10.0	9.24		ug/L		92	73 - 127	
1,1-Dichloroethene	10.0	10.7		ug/L		107	50 - 150	
1,2-Dichloroethane	10.0	9.19		ug/L		92	70 - 130	
1,2-Dichloropropane	10.0	9.63		ug/L		96	35 - 150	
1,2-Dichlorobenzene	10.0	9.53		ug/L		95	65 - 135	
1,3-Dichlorobenzene	10.0	9.45		ug/L		94	73 - 127	

Eurofins TestAmerica, Pittsburgh

Page 21 of 27

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13

QC Sample Results

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-127141-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-373862/3

Matrix: Water

Analysis Batch: 373862

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,4-Dichlorobenzene	10.0	9.25		ug/L		92	65 - 135
2-Chloroethyl vinyl ether	20.0	14.2		ug/L		71	10 - 150
Acrolein	30.0	19.0	J	ug/L		63	60 - 140
Acrylonitrile	100	96.4		ug/L		96	60 - 140
Benzene	10.0	10.6		ug/L		106	65 - 135
Bromoform	10.0	18.7	*+	ug/L		187	71 - 129
Bromomethane	10.0	12.4		ug/L		124	15 - 150
Carbon disulfide	10.0	12.2		ug/L		122	44 - 150
Carbon tetrachloride	10.0	10.9		ug/L		109	73 - 127
Chlorobenzene	10.0	10.2		ug/L		102	66 - 134
Chloroform	10.0	10.7		ug/L		107	70 - 135
Chloromethane	10.0	6.70		ug/L		67	10 - 150
cis-1,2-Dichloroethene	10.0	9.62		ug/L		96	39 - 150
cis-1,3-Dichloropropene	10.0	14.2		ug/L		142	25 - 150
Ethylbenzene	10.0	10.4		ug/L		104	60 - 140
Methylene Chloride	10.0	11.8		ug/L		118	60 - 140
Tetrachloroethene	10.0	11.3		ug/L		113	74 - 126
Toluene	10.0	10.7		ug/L		107	75 - 125
trans-1,2-Dichloroethene	10.0	9.84		ug/L		98	70 - 130
trans-1,3-Dichloropropene	10.0	13.4		ug/L		134	50 - 150
Trichloroethene	10.0	9.62		ug/L		96	67 - 133
Vinyl chloride	10.0	8.79		ug/L		88	10 - 150
Dibromochloromethane	10.0	12.8		ug/L		128	70 - 135

10.0

11.4

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		42 - 142
4-Bromofluorobenzene (Surr)	112		54 - 114
Toluene-d8 (Surr)	114		61 - 125
Dibromofluoromethane (Surr)	120		60 - 150

Lab Sample ID: MB 180-374004/8

Matrix: Water

Dichlorobromomethane

Analysis Batch: 374004

Client Sample ID: Method Blank

65 - 135

Prep Type: Total/NA

MB	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		1.0	0.60	ug/L			10/05/21 11:37	1
ND		1.0	0.60	ug/L			10/05/21 11:37	1
ND		1.0	0.45	ug/L			10/05/21 11:37	1
ND		1.0	0.31	ug/L			10/05/21 11:37	1
ND		1.0	0.55	ug/L			10/05/21 11:37	1
ND		1.0	0.57	ug/L			10/05/21 11:37	1
ND		1.0	0.66	ug/L			10/05/21 11:37	1
ND		1.0	0.36	ug/L			10/05/21 11:37	1
ND		1.0	0.50	ug/L			10/05/21 11:37	1
ND		1.0	0.54	ug/L			10/05/21 11:37	1
ND		2.0	1.7	ug/L			10/05/21 11:37	1
ND		20	16	ug/L			10/05/21 11:37	1
	Result ND ND ND ND ND ND ND ND ND N	ND N	Result Qualifier RL ND 1.0 ND 2.0	Result Qualifier RL MDL ND 1.0 0.60 ND 1.0 0.45 ND 1.0 0.31 ND 1.0 0.55 ND 1.0 0.57 ND 1.0 0.66 ND 1.0 0.36 ND 1.0 0.50 ND 1.0 0.54 ND 2.0 1.7	Result Qualifier RL MDL ug/L ND 1.0 0.60 ug/L ND 1.0 0.60 ug/L ND 1.0 0.45 ug/L ND 1.0 0.31 ug/L ND 1.0 0.55 ug/L ND 1.0 0.57 ug/L ND 1.0 0.36 ug/L ND 1.0 0.50 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L ND 2.0 1.7 ug/L	Result Qualifier RL MDL Unit D ND 1.0 0.60 ug/L ND 1.0 0.60 ug/L ND 1.0 0.45 ug/L ND 1.0 0.31 ug/L ND 1.0 0.55 ug/L ND 1.0 0.57 ug/L ND 1.0 0.36 ug/L ND 1.0 0.50 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L ND 1.7 ug/L	Result Qualifier RL MDL Unit D Prepared ND 1.0 0.60 ug/L ND 1.0 0.60 ug/L ND 1.0 0.45 ug/L ND 1.0 0.55 ug/L ND 1.0 0.57 ug/L ND 1.0 0.66 ug/L ND 1.0 0.50 ug/L ND 1.0 0.50 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L ND 1.0 0.54 ug/L	Result Qualifier RL MDL ug/L D Prepared Analyzed ND 1.0 0.60 ug/L 10/05/21 11:37 ND 1.0 0.60 ug/L 10/05/21 11:37 ND 1.0 0.45 ug/L 10/05/21 11:37 ND 1.0 0.31 ug/L 10/05/21 11:37 ND 1.0 0.55 ug/L 10/05/21 11:37 ND 1.0 0.57 ug/L 10/05/21 11:37 ND 1.0 0.36 ug/L 10/05/21 11:37 ND 1.0 0.50 ug/L 10/05/21 11:37 ND 1.0 0.50 ug/L 10/05/21 11:37 ND 1.0 0.54 ug/L<

Eurofins TestAmerica, Pittsburgh

Page 22 of 27

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-127141-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-374004/8

Matrix: Water

Analysis Batch: 374004

Client Sample ID: Method Blank

Prep Type: Total/NA

7 many 515 2 m 51 m 51 m 52 m	MD	МВ							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrylonitrile	ND		20		ug/L	<u> </u>		10/05/21 11:37	1
Benzene	ND		1.0	0.60	ug/L			10/05/21 11:37	1
Bromoform	ND		1.0	0.98	ug/L			10/05/21 11:37	1
Bromomethane	ND		1.0	0.89	ug/L			10/05/21 11:37	1
Carbon disulfide	ND		1.0	0.88	ug/L			10/05/21 11:37	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			10/05/21 11:37	1
Chlorobenzene	ND		1.0	0.50	ug/L			10/05/21 11:37	1
Chloroform	ND		1.0	0.60	ug/L			10/05/21 11:37	1
Chloromethane	ND		1.0	0.90	ug/L			10/05/21 11:37	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			10/05/21 11:37	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			10/05/21 11:37	1
Ethylbenzene	ND		1.0	0.51	ug/L			10/05/21 11:37	1
Methylene Chloride	ND		1.0	0.89	ug/L			10/05/21 11:37	1
Tetrachloroethene	ND		1.0	0.47	ug/L			10/05/21 11:37	1
Toluene	ND		1.0	0.46	ug/L			10/05/21 11:37	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			10/05/21 11:37	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			10/05/21 11:37	1
Trichloroethene	ND		1.0	0.69	ug/L			10/05/21 11:37	1
Vinyl chloride	ND		1.0	0.40	ug/L			10/05/21 11:37	1
Dibromochloromethane	ND		1.0	0.84	ug/L			10/05/21 11:37	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			10/05/21 11:37	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	102		42 - 142		10/05/21 11:37	1	
4-Bromofluorobenzene (Surr)	91		54 - 114		10/05/21 11:37	1	
Toluene-d8 (Surr)	103		61 - 125		10/05/21 11:37	1	
Dibromofluoromethane (Surr)	124		60 - 150		10/05/21 11:37	1	

Lab Sample ID: LCS 180-374004/1007

Matrix: Water

Analysis Batch: 374004

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	10.2		ug/L		102	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	9.32		ug/L		93	60 - 140	
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	71 - 129	
1,1-Dichloroethane	10.0	8.54		ug/L		85	73 - 127	
1,1-Dichloroethene	10.0	9.84		ug/L		98	50 - 150	
1,2-Dichloroethane	10.0	8.23		ug/L		82	70 - 130	
1,2-Dichloropropane	10.0	9.10		ug/L		91	35 - 150	
1,2-Dichlorobenzene	10.0	8.17		ug/L		82	65 - 135	
1,3-Dichlorobenzene	10.0	8.69		ug/L		87	73 - 127	
1,4-Dichlorobenzene	10.0	8.39		ug/L		84	65 - 135	
2-Chloroethyl vinyl ether	20.0	11.5		ug/L		58	10 - 150	
Acrolein	30.0	21.4		ug/L		71	60 - 140	
Acrylonitrile	100	79.7		ug/L		80	60 - 140	
Benzene	10.0	10.1		ug/L		101	65 - 135	
Bromoform	10.0	15.9	*+	ug/L		159	71 - 129	

Eurofins TestAmerica, Pittsburgh

Page 23 of 27

QC Sample Results

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-127141-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-374004/1007

Matrix: Water

Analysis Batch: 374004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS L	_CS		%Rec.	
Analyte	Added	Result (Qualifier Unit	D %Rec	Limits	
Bromomethane	10.0	12.3	ug/L	123	15 - 150	
Carbon disulfide	10.0	11.2	ug/L	112	44 - 150	
Carbon tetrachloride	10.0	10.7	ug/L	107	73 - 127	
Chlorobenzene	10.0	9.21	ug/L	92	66 - 134	
Chloroform	10.0	9.77	ug/L	98	70 - 135	
Chloromethane	10.0	5.47	ug/L	55	10 - 150	
cis-1,2-Dichloroethene	10.0	9.38	ug/L	94	39 - 150	
cis-1,3-Dichloropropene	10.0	13.3	ug/L	133	25 - 150	
Ethylbenzene	10.0	9.34	ug/L	93	60 - 140	
Methylene Chloride	10.0	9.21	ug/L	92	60 - 140	
Tetrachloroethene	10.0	10.4	ug/L	104	74 - 126	
Toluene	10.0	9.52	ug/L	95	75 - 125	
trans-1,2-Dichloroethene	10.0	9.40	ug/L	94	70 - 130	
trans-1,3-Dichloropropene	10.0	11.5	ug/L	115	50 - 150	
Trichloroethene	10.0	9.47	ug/L	95	67 - 133	
Vinyl chloride	10.0	8.32	ug/L	83	10 - 150	
Dibromochloromethane	10.0	11.0	ug/L	110	70 - 135	
Dichlorobromomethane	10.0	10.8	ua/L	108	65 - 135	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		42 - 142
4-Bromofluorobenzene (Surr)	99		54 - 114
Toluene-d8 (Surr)	104		61 - 125
Dibromofluoromethane (Surr)	121		60 - 150

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-127141-1

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 373269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127141-1	EW-1 (091521)	Total/NA	Water	EPA 624	
180-127141-2	EW-2 (091521)	Total/NA	Water	EPA 624	
180-127141-3	MW10D (091521)	Total/NA	Water	EPA 624	
180-127141-4	TRIP BLANK	Total/NA	Water	EPA 624	
180-127141-5	EFFLUENT (091521)	Total/NA	Water	EPA 624	
MB 180-373269/13	Method Blank	Total/NA	Water	EPA 624	
LCS 180-373269/8	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 373862

Lab Sample ID 180-127141-1 - DL	Client Sample ID EW-1 (091521)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
180-127141-3 - RA	MW10D (091521)	Total/NA	Water	EPA 624	
MB 180-373862/31	Method Blank	Total/NA	Water	EPA 624	
LCS 180-373862/3	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 374004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127141-2 - RADL	EW-2 (091521)	Total/NA	Water	EPA 624	
180-127141-3 - RA2	MW10D (091521)	Total/NA	Water	EPA 624	
180-127141-5 - RADL	EFFLUENT (091521)	Total/NA	Water	EPA 624	
MB 180-374004/8	Method Blank	Total/NA	Water	EPA 624	
LCS 180-374004/1007	Lab Control Sample	Total/NA	Water	EPA 624	

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park

Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

Baltimore @ eurofins

Environment Testing America

Client Information	Sampler: Andy	. Feild		PM: lussy, Jill L		Carrier Tracking No(s):		COC No: 180-72814-14117.1
Client Contact: Ms. Shwetha Sridharan	Phone: 443	354 018	E-M: Jill.		urofinset.com	State of Origin: Marylano	/	Page: Page 1 of 5
Company: ARCADIS U.S., Inc.		PWSID:			Analysis	Requested		Job#:
Address: 7550 Teague Road Suite 210	Due Date Requested:	Stand	las					Preservation Codes:
City:	TAT Requested (days)	: 1	1					A - HCL M - Hexane B - NaOH N - None
Hanover State, Zip:		Norm		1 3				C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
MD, 21076 Phone:	Compliance Project:	Δ Yes Δ No						E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
302-897-8993(Tel)	30005455.0002.			Dies.			1970	G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO #:			6 (Yes or No)				I - Ice U - Acetone J - DI Water V - MCAA
Project Name:	Project #:			18 3			alner	K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Cytec Havre de Grace MD Site:	18017987 ssow#:			Sample (Y			conte	Other:
Cytec				「副夢って			or of	
		Samp		Filtered			Total Number of containers	
	s	Typ Sample (C=co	Smolid	250			Z Z	₫ ====
Sample Identification	Sample Date		ab) BT=Tissue, A=Air	川田			l e	Special 1
Gill Laura	115	Design St.	ervation Code:	M,			+	71.4
EW-1 (091521)	7/15/21	1110 G	W	3				- Q
ELJ-2 (091521)	91/5/21	1115 G	ω	3	 		86	an i
MW 10D (091521)	9/15/21/1	120 G	W	3				0 -
Trip Blank Effluent (091521)	_			3				Custod
Effluent (091521)	9/15/21/1	125 G	. س	3			272	*
	7							
				++				
				+++			2.0	
				+++			100	-
								11
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐	Poison R Latrour	n 🗆 Padiolo	aical		e Disposal (A fee ma Retum To Client	y be assessed if samples a Disposal By Lab		ed longer than 1 month) nive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	I JISUII D UIIKIIUW	n Radiolo	givai		Instructions/QC Requ		AIGI	ino i oiinoidis
Empty Kit Relinquished by:	Da	ate:		Time:		Method of Shipment.	,	
Relinquished by:	Date/Time:	21 136	Company O Arca	di- Rota	eived by:	Date/fime	5/2/	1300 FA-BAI
Relinquished by:	Date/Time/	700	Company B	A (Reco	eived by:	Date/Firm	-16	2 Company
Relinquished by:	Date/Time:		Company		eived by:	Date/Time	e:	10200 Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No				Cool	er Temperature(s) °C and C	ther Remarks:		

Client: ARCADIS U.S., Inc.

Job Number: 180-127141-1

Login Number: 127141

List Number: 1

Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-129527-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan



Authorized for release by: 11/18/2021 3:03:57 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-129527-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	19
QC Association Summary	38
Chain of Custody	41
Receipt Checklists	44

4

6

8

9

11

12

Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-129527-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-129527-1

Receipt

The samples were received on 11/4/2021 10:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7° C.

GC/MS VOA

The following samples were received preserved with hydrochloric acid: POTW OUTFALL(110221) (180-129527-1) and TRIP BLANK (180-129527-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Due to the concentration of target compounds detected, several samples were analyzed at a dilution. The reporting limits have been adjusted accordingly.

Samples EW-2 (110221) (180-129527-4) and EFFLUENT (110221) (180-129527-6) have analysis dates and times of 11/08/2021 12:03 & 12:32 AM. The dates were actually but it is actually 11/09/2021. The date did not change due to daylight saving time.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 180-377745 recovered outside control limits for Bromoform. This analyte was biased high in the LCS and was not detected in the associated samples: therefore, the data have been reported.

The relative percent difference between the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 180-377745 was outside of the control limits for Bromomethane. The recoveries were within the control limits. All data was reported.

The laboratory control sample (LCS) for analytical batch 180-378302 recovered outside control limits for the following analytes: Acrylonitrile. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compound was not detected in the samples, the data have been reported and qualified.

The laboratory control sample (LCS) for analytical batch 180-378302 recovered outside control limits for the following analytes: Carbon tetrachloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for batch 180-378902 recovered outside control limits for Bromoform. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-379035 recovered outside control limits for Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

The continuing calibration verification (CCV) associated with batch 180-378187 recovered above the upper control limit for total cyanide. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

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G	U/	IV	S	v	U	А

 Qualifier
 Qualifier Description

 * LCS and/or LCSD is outside acceptance limits, low biased.

 *+
 LCS and/or LCSD is outside acceptance limits, high biased.

*1 LCS/LCSD RPD exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier Qualifier Description

^+ Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Eurofins TestAmerica, Pittsburgh

Page 4 of 44

3

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5

6

9

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Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22
Virginia	NELAP	10043	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129527-1	POTW OUTFALL(110221)	Water	11/02/21 14:30	11/04/21 10:45
180-129527-2	TRIP BLANK	Water	11/02/21 00:00	11/04/21 10:45
180-129527-3	EW-1 (110221)	Water	11/02/21 13:45	11/04/21 10:45
180-129527-4	EW-2 (110221)	Water	11/02/21 13:40	11/04/21 10:45
180-129527-5	MW-10D(110221)	Water	11/02/21 13:50	11/04/21 10:45
180-129527-6	EFFLUENT (110221)	Water	11/02/21 13:55	11/04/21 10:45
180-129527-7	TRIP BLANK	Water	11/02/21 00:00	11/04/21 10:45

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Method Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method **Method Description** Protocol Laboratory Volatile Organic Compounds (GC/MS) **EPA 624** 40CFR136A TAL PIT EPA 624.1 Volatile Organic Compounds (GC/MS) 40CFR136A **TAL PIT** 40 CFR 761 EPA 625.1 Semivolatile Organic Compounds (GC/MS) **TAL PIT** EPA 200.7 Rev 4 Metals (ICP) EPA TAL PIT EPA 245.1 Rev. Mercury (CVAA) **EPA** TAL PIT SM 4500CN E Total Cyanide SM TAL PIT 200.7 Preparation, Total Recoverable Metals EPA TAL PIT 245.1 Preparation, Mercury **EPA TAL PIT** 625 Liquid-Liquid Extraction 40CFR136A **TAL PIT** SM 4500 CN C Cyanide, Distillation TAL PIT SM

Protocol References:

40 CFR 761 = Toxic Substances Control Act (TSCA)

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30

Date Received: 11/04/21 10:45

Lab Sample ID: 180-129527-1

Matrix: Water

Job ID: 180-129527-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624.1 at ID: CHHP6		1	5 mL	5 mL	378694	11/12/21 13:31	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624.1 at ID: CHHP6	DL	150	5 mL	5 mL	379035	11/16/21 22:33	C1K	TAL PIT
Total/NA	Prep	625			260 mL	250 uL	378109	11/08/21 13:28	BJT	TAL PIT
Total/NA	Analysis Instrumer	EPA 625.1 at ID: CH71		1	1 mL	1 mL	378351	11/11/21 16:55	VVP	TAL PIT
Total Recoverable	Prep	200.7			50 mL	50 mL	377852	11/08/21 11:30	RGM	TAL PIT
Total Recoverable	Analysis Instrumer	EPA 200.7 Rev 4 at ID: C		1			378321	11/10/21 01:37	RJG	TAL PIT
Total/NA	Prep	245.1			25 mL	25 mL	377755	11/05/21 08:16	RJR	TAL PIT
Total/NA	Analysis Instrumer	EPA 245.1 Rev. at ID: HGY		1			378250	11/09/21 10:45	RJR	TAL PIT
Total/NA	Prep	SM 4500 CN C			6 mL	6 mL	378062	11/08/21 11:30	CMR	TAL PIT
Total/NA	Analysis Instrumer	SM 4500CN E at ID: SEAL2		1			378187	11/08/21 15:11	CMR	TAL PIT

Client Sample ID: TRIP BLANK

Date Collected: 11/02/21 00:00

Date Received: 11/04/21 10:45

Lab Sample ID: 180-129527-2

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624.1 at ID: CHHP6		1	5 mL	5 mL	378694	11/12/21 14:30	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624.1	RA	1	5 mL	5 mL	378902	11/15/21 12:51	PJJ	TAL PIT

Client Sample ID: EW-1 (110221)

Lab Sample ID: 180-129527-3 Date Collected: 11/02/21 13:45 **Matrix: Water** Date Received: 11/04/21 10:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745	11/05/21 20:44	PJJ	TAL PIT
	Instrumer	t ID: CHHP6								
Total/NA	Analysis	EPA 624	DL	40	5 mL	5 mL	377976	11/08/21 05:28	PJJ	TAL PIT
	Instrumer	t ID: CHHP6								

Client Sample ID: EW-2 (110221)

Date Collected: 11/02/21 13:40

Date Received: 11/04/21 10:45

Prep Type Total/NA	Batch Type Analysis Instrumen	Batch Method EPA 624 t ID: CHHP6	Run	Factor 1	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 377745	Prepared or Analyzed 11/05/21 20:14	Analyst PJJ	Lab TAL PIT
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP6	DL	1250	5 mL	5 mL	378019	11/08/21 00:32	C1K	TAL PIT

Eurofins TestAmerica, Pittsburgh

Lab Sample ID: 180-129527-4

Page 8 of 44

Matrix: Water

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-10D(110221) Lab Sample ID: 180-129527-5

Date Collected: 11/02/21 13:50 **Matrix: Water** Date Received: 11/04/21 10:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745	11/05/21 19:44	PJJ	TAL PIT
	Instrumen	t ID: CHHP6								
Total/NA	Analysis	EPA 624	DL	50	5 mL	5 mL	378302	11/09/21 20:42	SW1	TAL PIT
	Instrumen	t ID: CHHP6								

Client Sample ID: EFFLUENT (110221) Lab Sample ID: 180-129527-6

Date Collected: 11/02/21 13:55 **Matrix: Water** Date Received: 11/04/21 10:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745	11/05/21 19:15	PJJ	TAL PIT
	Instrumer	t ID: CHHP6								
Total/NA	Analysis	EPA 624	DL	750	5 mL	5 mL	378019	11/08/21 00:03	C1K	TAL PIT
	Instrumer	t ID: CHHP6								

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-129527-7 Date Collected: 11/02/21 00:00 **Matrix: Water**

Date Received: 11/04/21 10:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745			TAL PIT
	Instrumer	nt ID: CHHP6								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BJT = Bill Trout

CMR = Carl Reagle

RGM = Rebecca Manns

RJR = Ron Rosenbaum

Batch Type: Analysis

C1K = Chamaiporn Krisorn

CMR = Carl Reagle

PJJ = Patrick Journet

RJG = Rob Good

RJR = Ron Rosenbaum

SW1 = Sunan Wang-un

VVP = Vincent Piccolino

Eurofins TestAmerica, Pittsburgh

Page 9 of 44

Client: ARCADIS U.S., Inc.

Date Received: 11/04/21 10:45

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30

Lab Sample ID: 180-129527-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 13:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 13:31	1
1,1,2-Trichloroethane	7.3		1.0	0.45	ug/L			11/12/21 13:31	1
1,1-Dichloroethane	1.4		1.0	0.31	ug/L			11/12/21 13:31	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 13:31	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 13:31	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/12/21 13:31	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/12/21 13:31	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/12/21 13:31	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/12/21 13:31	1
Acrolein	ND		20	16	ug/L			11/12/21 13:31	1
Acrylonitrile	ND		20	7.8	ug/L			11/12/21 13:31	1
Benzene	ND		1.0	0.60	ug/L			11/12/21 13:31	1
Bromoform	ND		1.0	0.98	ug/L			11/12/21 13:31	1
Bromomethane	ND		1.0	0.89	ug/L			11/12/21 13:31	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/12/21 13:31	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/12/21 13:31	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/12/21 13:31	1
Chloromethane	ND		1.0	0.90	ug/L			11/12/21 13:31	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/12/21 13:31	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/12/21 13:31	1
Chloroethane	ND		1.0	0.90	ug/L			11/12/21 13:31	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/12/21 13:31	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/12/21 13:31	1
Toluene	ND		1.0	0.46	ug/L			11/12/21 13:31	1
trans-1,2-Dichloroethene	1.0		1.0	0.67	ug/L			11/12/21 13:31	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/12/21 13:31	1
Trichloroethene	0.82	J	1.0	0.69	ug/L			11/12/21 13:31	1
Chloroform	ND		1.0	0.60	ug/L			11/12/21 13:31	1
Vinyl chloride	17		1.0	0.40	ug/L			11/12/21 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		41 - 122			•		11/12/21 13:31	1
Toluene-d8 (Surr)	89		53 - 125					11/12/21 13:31	1
1,2-Dichloroethane-d4 (Surr)	89		28 - 163					11/12/21 13:31	1
Dibromofluoromethane (Surr)	105		59 - 168					11/12/21 13:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	2400		150	86	ug/L			11/16/21 22:33	150
Methylene Chloride	3900		150	130	ug/L			11/16/21 22:33	150
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	58		41 - 122					11/16/21 22:33	150
Toluene-d8 (Surr)	87		53 - 125					11/16/21 22:33	150
1,2-Dichloroethane-d4 (Surr)	89		28 - 163					11/16/21 22:33	150

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Lab Sample ID: 180-129527-1

Date Collected: 11/02/21 14:30 **Matrix: Water** Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acenaphthylene	ND		0.18	0.063	ug/L		11/08/21 13:28	11/11/21 16:55	
Acenaphthene	ND		0.18	0.063	ug/L		11/08/21 13:28	11/11/21 16:55	
Anthracene	ND		0.18	0.047	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzidine	ND	F1	19	8.8	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[a]anthracene	ND		0.18	0.072	-		11/08/21 13:28	11/11/21 16:55	
Benzo[b]fluoranthene	ND		0.18	0.093	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[k]fluoranthene	ND		0.18	0.085	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[g,h,i]perylene	ND		0.18	0.066	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[a]pyrene	ND		0.18	0.051	ug/L		11/08/21 13:28	11/11/21 16:55	
Bis(2-chloroethyl)ether	ND		0.18	0.038	ug/L		11/08/21 13:28	11/11/21 16:55	
Bis(2-ethylhexyl) phthalate	ND		9.6		ug/L		11/08/21 13:28	11/11/21 16:55	
4-Bromophenyl phenyl ether	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Butyl benzyl phthalate	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
4-Chloro-3-methylphenol	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2-Chloronaphthalene	ND	F1	0.18	0.057	_		11/08/21 13:28	11/11/21 16:55	
2-Chlorophenol	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Chrysene	ND		0.18	0.078	-		11/08/21 13:28	11/11/21 16:55	
Dibenzo(a,h)-anthracene	ND		0.18	0.069	-		11/08/21 13:28	11/11/21 16:55	
	0.78		0.96	0.71	ug/L		11/08/21 13:28	11/11/21 16:55	
Di-n-butyl phthalate 3,3'-Dichlorobenzidine	ND	J	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dichlorophenol	ND		0.30	0.049	•		11/08/21 13:28	11/11/21 16:55	
Diethyl phthalate	ND		0.16		ug/L ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dimethylphenol	ND		0.96		ug/L ug/L		11/08/21 13:28	11/11/21 16:55	
•	ND ND		0.96		-				
Dimethyl phthalate					ug/L		11/08/21 13:28	11/11/21 16:55	
4,6-Dinitro-2-methylphenol	ND		4.8		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dinitrophenol	ND		9.6		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dinitrotoluene	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2,6-Dinitrotoluene	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Di-n-octyl phthalate	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Fluoranthene	ND		0.18	0.058			11/08/21 13:28	11/11/21 16:55	
Fluorene	ND	F1	0.18	0.066	-		11/08/21 13:28	11/11/21 16:55	
Hexachlorobenzene	ND		0.18	0.054	-		11/08/21 13:28	11/11/21 16:55	
Hexachlorobutadiene	ND		0.18	0.066			11/08/21 13:28	11/11/21 16:55	
Hexachlorocyclopentadiene	ND	F1	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Hexachloroethane	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
ndeno[1,2,3-cd]pyrene	ND		0.18	0.082			11/08/21 13:28	11/11/21 16:55	
sophorone	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Naphthalene	ND		0.18	0.057	-		11/08/21 13:28	11/11/21 16:55	
Nitrobenzene	ND		1.9		ug/L		11/08/21 13:28	11/11/21 16:55	
2-Nitrophenol	ND		0.96	0.19	ug/L		11/08/21 13:28	11/11/21 16:55	
1-Nitrophenol	ND		4.8		ug/L		11/08/21 13:28	11/11/21 16:55	
N-Nitrosodimethylamine	ND		0.96	0.064			11/08/21 13:28	11/11/21 16:55	
N-Nitrosodiphenylamine	ND	F1	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
N-Nitrosodi-n-propylamine	ND		0.18	0.068	-		11/08/21 13:28	11/11/21 16:55	
2,2'-oxybis[1-chloropropane]	ND		0.18	0.056	ug/L		11/08/21 13:28	11/11/21 16:55	
Pentachlorophenol	ND		4.8	0.81	ug/L		11/08/21 13:28	11/11/21 16:55	
Phenanthrene	ND		0.18	0.053			11/08/21 13:28	11/11/21 16:55	
Phenol	ND		0.96	0.47	ug/L		11/08/21 13:28	11/11/21 16:55	
Pyrene	ND		0.18	0.052			11/08/21 13:28	11/11/21 16:55	

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Page 11 of 44

Job ID: 180-129527-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-1

Matrix: Water

Analyte	Result Qua	alifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND ND	0.96	0.13	ug/L		11/08/21 13:28	11/11/21 16:55	1
2,4,6-Trichlorophenol	ND	0.96	0.22	ug/L		11/08/21 13:28	11/11/21 16:55	1
Bis(2-chloroethoxy)methane	ND	0.96	0.15	ug/L		11/08/21 13:28	11/11/21 16:55	1
4-Chlorophenyl phenyl ether	ND	0.96	0.21	ug/L		11/08/21 13:28	11/11/21 16:55	1
1,2-Diphenylhydrazine(as	ND	0.96	0.19	ug/L		11/08/21 13:28	11/11/21 16:55	1
Azobenzene)								
Surrogate	%Recovery Qu	alifier Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	53	47 - 107				11/08/21 13:28	11/11/21 16:55	1
2-Fluorophenol	51	35 - 109				11/08/21 13:28	11/11/21 16:55	1
2,4,6-Tribromophenol	40	32 - 127				11/08/21 13:28	11/11/21 16:55	1
Nitrobenzene-d5	49	47 - 110				11/08/21 13:28	11/11/21 16:55	1
Phenol-d5	50	37 - 110				11/08/21 13:28	11/11/21 16:55	1
		32 - 115				11/08/21 13:28	11/11/21 16:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	5.7	ug/L		11/08/21 11:30	11/10/21 01:37	1
Cadmium	ND		5.0	0.33	ug/L		11/08/21 11:30	11/10/21 01:37	1
Chromium	ND		5.0	2.6	ug/L		11/08/21 11:30	11/10/21 01:37	1
Copper	ND		25	3.9	ug/L		11/08/21 11:30	11/10/21 01:37	1
Lead	ND		10	2.3	ug/L		11/08/21 11:30	11/10/21 01:37	1
Nickel	13	J	40	2.1	ug/L		11/08/21 11:30	11/10/21 01:37	1
Silver	ND		5.0	0.87	ug/L		11/08/21 11:30	11/10/21 01:37	1
Zinc	30		20	3.3	ug/L		11/08/21 11:30	11/10/21 01:37	1

Method: EPA 245.1 Rev N	lercury (CVAA)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		11/05/21 08:16	11/09/21 10:45	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0080	mg/L		11/08/21 11:30	11/08/21 15:11	1

Client Sample ID: TRIP BLANK Lab Sample ID: 180-129527-2 Date Collected: 11/02/21 00:00 **Matrix: Water** Date Received: 11/04/21 10:45

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 14:30	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 14:30	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/12/21 14:30	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/12/21 14:30	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 14:30	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 14:30	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/12/21 14:30	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/12/21 14:30	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/12/21 14:30	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/12/21 14:30	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/12/21 14:30	1

Eurofins TestAmerica, Pittsburgh

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Date Collected: 11/02/21 00:00 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-2

Matrix: Water

Method: EPA 624.1 - Volatile O	Organic Compounds ((GC/MS) (Continued)
	5 1/ 6 UC	D. 140.

Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND ND		16	ug/L			11/12/21 14:30	1
Acrylonitrile	ND	20	7.8	ug/L			11/12/21 14:30	1
Benzene	ND	1.0	0.60	ug/L			11/12/21 14:30	1
Bromoform	ND	1.0	0.98	ug/L			11/12/21 14:30	1
Bromomethane	ND	1.0	0.89	ug/L			11/12/21 14:30	1
Carbon tetrachloride	ND	1.0	0.88	ug/L			11/12/21 14:30	1
Chlorobenzene	ND	1.0	0.50	ug/L			11/12/21 14:30	1
Dibromochloromethane	ND	1.0	0.84	ug/L			11/12/21 14:30	1
Chloromethane	ND	1.0	0.90	ug/L			11/12/21 14:30	1
cis-1,3-Dichloropropene	ND	1.0	0.59	ug/L			11/12/21 14:30	1
Bromodichloromethane	ND	1.0	0.64	ug/L			11/12/21 14:30	1
Chloroethane	ND	1.0	0.90	ug/L			11/12/21 14:30	1
Ethylbenzene	ND	1.0	0.51	ug/L			11/12/21 14:30	1
Tetrachloroethene	ND	1.0	0.47	ug/L			11/12/21 14:30	1
Toluene	ND	1.0	0.46	ug/L			11/12/21 14:30	1
trans-1,2-Dichloroethene	ND	1.0	0.67	ug/L			11/12/21 14:30	1
trans-1,3-Dichloropropene	ND	1.0	0.58	ug/L			11/12/21 14:30	1
Trichloroethene	ND	1.0	0.69	ug/L			11/12/21 14:30	1
Vinyl chloride	ND	1.0	0.40	ug/L			11/12/21 14:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		41 - 122		11/12/21 14:30	1
Toluene-d8 (Surr)	101		53 - 125		11/12/21 14:30	1
1,2-Dichloroethane-d4 (Surr)	107		28 - 163		11/12/21 14:30	1
Dibromofluoromethane (Surr)	119		59 - 168		11/12/21 14:30	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) - RA Result Qualifier

118

Allalyte	Result Qualif	IEI KL	MIDL	Ullit	U	riepaieu	Allalyzeu	DII Fac	
Methylene Chloride	ND ND	1.0	0.89	ug/L			11/15/21 12:51	1	
Chloroform	ND	1.0	0.60	ug/L			11/15/21 12:51	1	
Surrogate	%Recovery Qualif	ier Limits				Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	73	41 - 122			_		11/15/21 12:51	1	
Toluene-d8 (Surr)	77	53 - 125					11/15/21 12:51	1	
1 2-Dichloroethane-d4 (Surr)	127	28 - 163					11/15/21 12:51	1	

59 - 168

Client Sample ID: EW-1 (110221)

Date Collected: 11/02/21 13:45 Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Lab Sample ID: 180-129527-3

11/15/21 12:51

Matrix: Water

Method: EPA 624 - Volatile	ethod: EPA 624 - Volatile Organic Compounds (GC/MS)										
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			11/05/21 20:44	1			
1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/L			11/05/21 20:44	1			
1,1,2-Trichloroethane	0.72 J	1.0	0.45	ug/L			11/05/21 20:44	1			
1,1-Dichloroethane	ND	1.0	0.31	ug/L			11/05/21 20:44	1			
1,1-Dichloroethene	ND	1.0	0.55	ug/L			11/05/21 20:44	1			
1,2-Dichloropropane	ND	1.0	0.66	ug/L			11/05/21 20:44	1			
1,2-Dichlorobenzene	ND	1.0	0.36	ug/L			11/05/21 20:44	1			
1,3-Dichlorobenzene	ND	1.0	0.50	ug/L			11/05/21 20:44	1			

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Job ID: 180-129527-1

Client Sample ID: EW-1 (110221) Lab Sample ID: 180-129527-3

Date Collected: 11/02/21 13:45 Eas Sample 15. 160-120027-0

Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 20:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 20:44	1
Acrolein	ND		20	16	ug/L			11/05/21 20:44	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 20:44	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 20:44	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 20:44	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 20:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 20:44	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:44	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 20:44	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 20:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 20:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 20:44	1
Methylene Chloride	9.8		1.0	0.89	ug/L			11/05/21 20:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 20:44	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 20:44	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 20:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 20:44	1
Trichloroethene	7.3		1.0	0.69	ug/L			11/05/21 20:44	1
Vinyl chloride	1.0		1.0	0.40	ug/L			11/05/21 20:44	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 20:44	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 20:44	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4.0. Districtions of the control of the Committee of the			00 400			-		44/05/04 00:44	

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	66	28 - 163		11/05/21 20:44	1
4-Bromofluorobenzene (Surr)	66	41 - 122		11/05/21 20:44	1
Toluene-d8 (Surr)	97	53 - 125		11/05/21 20:44	1
Dibromofluoromethane (Surr)	99	59 - 168		11/05/21 20:44	1

Method: EPA 624 - Volatile	Organic Comp	ounds (G	C/MS) - DL					
Analyte	Result	Qualifier	RL	MDL U	nit [D Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	380		40	23 ug	g/L		11/08/21 05:28	40
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	69		28 - 163				11/08/21 05:28	40
4-Bromofluorobenzene (Surr)	57		41 - 122				11/08/21 05:28	40
Toluene-d8 (Surr)	89		53 - 125				11/08/21 05:28	40

Client Sample ID: EW-2 (110221)

Date Collected: 11/02/21 13:40

Lab Sample ID: 180-129527-4

Matrix: Water

59 - 168

Date Collected: 11/02/21 13:40 Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Method: EPA 624 - Volatile	Organic Compounds (GC/I	MS)				
Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60 ug/L		11/05/21 20:14	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.60 ug/L		11/05/21 20:14	1
1,1,2-Trichloroethane	30	1.0	0.45 ug/L		11/05/21 20:14	1
1,1-Dichloroethane	7.7	1.0	0.31 ug/L		11/05/21 20:14	1
1,1-Dichloroethene	2.2	1.0	0.55 ug/L		11/05/21 20:14	1

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11/18/2021

11/08/21 05:28

Page 14 of 44

4

6

8

10

19

13

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-2 (110221)

Date Collected: 11/02/21 13:40 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-4

Matrix: Water

Method: EPA 624 -	Volatile Organic Compounds (GC/MS)) (Conti	nued)
Analyte	Result Qualifier	RL	MDL Unit

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 20:14	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 20:14	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:14	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 20:14	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 20:14	1
Acrolein	ND		20	16	ug/L			11/05/21 20:14	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 20:14	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 20:14	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 20:14	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 20:14	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 20:14	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:14	1
Chloroform	1.9		1.0	0.60	ug/L			11/05/21 20:14	1
Chloromethane	1.5		1.0	0.90	ug/L			11/05/21 20:14	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 20:14	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 20:14	1
Tetrachloroethene	3.1		1.0	0.47	ug/L			11/05/21 20:14	1
Toluene	0.75	J	1.0	0.46	ug/L			11/05/21 20:14	1
trans-1,2-Dichloroethene	12		1.0	0.67	ug/L			11/05/21 20:14	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 20:14	1
Trichloroethene	16		1.0	0.69	ug/L			11/05/21 20:14	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 20:14	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 20:14	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 20:14	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	42	28 - 163		11/05/21 20:14	1
4-Bromofluorobenzene (Surr)	66	41 - 122		11/05/21 20:14	1
Toluene-d8 (Surr)	93	53 - 125		11/05/21 20:14	1
Dibromofluoromethane (Surr)	91	59 - 168		11/05/21 20:14	1

Method: EPA	624 - Volatile Organ	ic Compounds	(GC/MS) - DL
A I 4 .		D 14 O 1161 .	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	4700		1300	720	ug/L			11/08/21 00:32	1250
Methylene Chloride	17000		1300	1100	ug/L			11/08/21 00:32	1250
Vinyl chloride	ND		1300	500	ug/L			11/08/21 00:32	1250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	57		28 - 163		11/08/21 00:32	1250	
4-Bromofluorobenzene (Surr)	48		41 - 122		11/08/21 00:32	1250	
Toluene-d8 (Surr)	89		53 - 125		11/08/21 00:32	1250	
Dibromofluoromethane (Surr)	97		59 - 168		11/08/21 00:32	1250	

Client Sample ID: MW-10D(110221)

Date Collected: 11/02/21 13:50 Date Received: 11/04/21 10:45

Lab \$	Sample	ID:	180-129527-5

Matrix: Water

Method: EPA 624 - Volatile O	rganic Compounds (GC/N	VIS)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND —	1.0	0.60 ug/L			11/05/21 19:44	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.60 ug/L			11/05/21 19:44	1

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Client Sample ID: MW-10D(110221)

Date Collected: 11/02/21 13:50 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-5

Matrix: Water

Job ID: 180-129527-1

Method: EPA 624 - Volatile Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.73		1.0	0.45		= -	ора оа	11/05/21 19:44	1
1,1-Dichloroethane	ND		1.0	0.31				11/05/21 19:44	
1,1-Dichloroethene	ND		1.0	0.55	-			11/05/21 19:44	1
1,2-Dichloropropane	ND		1.0		ug/L			11/05/21 19:44	1
1,2-Dichlorobenzene	ND		1.0		ug/L			11/05/21 19:44	1
1,3-Dichlorobenzene	ND		1.0	0.50	-			11/05/21 19:44	1
1,4-Dichlorobenzene	ND		1.0	0.54	•			11/05/21 19:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 19:44	1
Acrolein	ND		20	16	ug/L			11/05/21 19:44	1
Acrylonitrile	ND		20		ug/L			11/05/21 19:44	1
Benzene	ND		1.0	0.60				11/05/21 19:44	1
Bromoform	ND	*+	1.0	0.98	-			11/05/21 19:44	1
Bromomethane	ND	*1	1.0	0.89	-			11/05/21 19:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 19:44	1
Chlorobenzene	ND		1.0		ug/L			11/05/21 19:44	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 19:44	1
Chloromethane	ND		1.0	0.90				11/05/21 19:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 19:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 19:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 19:44	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 19:44	1
trans-1,2-Dichloroethene	1.3		1.0	0.67	ug/L			11/05/21 19:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 19:44	1
Trichloroethene	2.0		1.0	0.69	ug/L			11/05/21 19:44	1
Vinyl chloride	2.9		1.0	0.40	ug/L			11/05/21 19:44	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 19:44	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 19:44	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	65		28 - 163			-		11/05/21 19:44	1
4-Bromofluorobenzene (Surr)	71		41 - 122					11/05/21 19:44	1
Toluene-d8 (Surr)	91		53 - 125					11/05/21 19:44	1
Dibromofluoromethane (Surr)	97		59 - 168					11/05/21 19:44	1

Method: EPA 624 - Volatile	Organic Comp	C/MS) - DL							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	290		50	29	ug/L			11/09/21 20:42	50
Methylene Chloride	59		50	44	ug/L			11/09/21 20:42	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		28 - 163					11/09/21 20:42	50
4-Bromofluorobenzene (Surr)	87		41 - 122					11/09/21 20:42	50
Toluene-d8 (Surr)	105		53 - 125					11/09/21 20:42	50
Dibromofluoromethane (Surr)	141		59 - 168					11/09/21 20:42	50

Client Sample ID: EFFLUENT (110221)

Lab Sample ID: 180-129527-6

Date Collected: 11/02/21 13:55

Matrix: Water

Job ID: 180-129527-1

Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 19:15	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 19:15	1
1,1,2-Trichloroethane	9.9		1.0	0.45	ug/L			11/05/21 19:15	1
1,1-Dichloroethane	3.1		1.0	0.31	ug/L			11/05/21 19:15	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 19:15	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 19:15	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 19:15	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 19:15	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 19:15	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 19:15	1
Acrolein	ND		20	16	ug/L			11/05/21 19:15	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 19:15	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 19:15	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 19:15	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 19:15	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 19:15	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 19:15	1
Chloroform	0.92	J	1.0	0.60	ug/L			11/05/21 19:15	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 19:15	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 19:15	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 19:15	1
Tetrachloroethene	1.1		1.0	0.47	ug/L			11/05/21 19:15	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 19:15	1
trans-1,2-Dichloroethene	4.8		1.0	0.67	ug/L			11/05/21 19:15	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 19:15	1
Trichloroethene	7.5		1.0	0.69	ug/L			11/05/21 19:15	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 19:15	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 19:15	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 19:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	54		28 - 163			-		11/05/21 19:15	1
4-Bromofluorobenzene (Surr)	71		41 - 122					11/05/21 19:15	1
Toluene-d8 (Surr)	95		53 - 125					11/05/21 19:15	1
Dibromofluoromethane (Surr)	94		59 - 168					11/05/21 19:15	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	5800		750	430	ug/L			11/08/21 00:03	750
Methylene Chloride	19000		750	660	ug/L			11/08/21 00:03	750
Vinyl chloride	ND		750	300	ug/L			11/08/21 00:03	750
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	65		28 - 163					11/08/21 00:03	750
4-Bromofluorobenzene (Surr)	64		41 - 122					11/08/21 00:03	750
Toluene-d8 (Surr)	91		53 - 125					11/08/21 00:03	750
Dibromofluoromethane (Surr)	110		59 - 168					11/08/21 00:03	750

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Date Collected: 11/02/21 00:00

Lab Sample ID: 180-129527-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 17:47	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 17:47	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/05/21 17:47	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/05/21 17:47	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 17:47	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/05/21 17:47	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 17:47	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 17:47	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 17:47	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 17:47	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 17:47	1
Acrolein	ND		20	16	ug/L			11/05/21 17:47	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 17:47	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 17:47	1
Bromoform	ND 3	*+	1.0	0.98	ug/L			11/05/21 17:47	1
Bromomethane	ND ¹	*1	1.0	0.89	ug/L			11/05/21 17:47	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 17:47	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 17:47	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 17:47	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 17:47	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 17:47	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 17:47	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/05/21 17:47	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 17:47	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 17:47	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 17:47	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 17:47	1
Trichloroethene	ND		1.0	0.69	ug/L			11/05/21 17:47	1
Vinyl chloride	ND		1.0	0.40	ug/L			11/05/21 17:47	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 17:47	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 17:47	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 17:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		28 - 163			·-		11/05/21 17:47	1
4-Bromofluorobenzene (Surr)	69		41 - 122					11/05/21 17:47	1
Toluene-d8 (Surr)	88		53 - 125					11/05/21 17:47	1

11/18/2021

11/05/21 17:47

59 - 168

106

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Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-377745/9

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Baton. 077740	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 14:17	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 14:17	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/05/21 14:17	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/05/21 14:17	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 14:17	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/05/21 14:17	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 14:17	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 14:17	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 14:17	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 14:17	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 14:17	1
Acrolein	ND		20	16	ug/L			11/05/21 14:17	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 14:17	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 14:17	1
Bromoform	ND		1.0	0.98	ug/L			11/05/21 14:17	1
Bromomethane	ND		1.0	0.89	ug/L			11/05/21 14:17	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 14:17	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 14:17	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 14:17	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 14:17	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 14:17	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 14:17	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/05/21 14:17	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 14:17	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 14:17	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 14:17	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 14:17	1
Trichloroethene	ND		1.0	0.69	ug/L			11/05/21 14:17	1
Vinyl chloride	ND		1.0	0.40	ug/L			11/05/21 14:17	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 14:17	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 14:17	1
Chloroethane	ND		1.0		ug/L			11/05/21 14:17	1

Surrogate	%Recovery	Qualifier Lim	nits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (S	Surr) 88	28 -	<u>- 163</u>		11/05/21 14:17	1
4-Bromofluorobenzene (Surr) 78	41 -	- 122		11/05/21 14:17	1
Toluene-d8 (Surr)	82	53 -	- 125		11/05/21 14:17	1
Dibromofluoromethane (Surr) 109	59 -	- 168		11/05/21 14:17	1

Lab Sample ID: LCS 180-377745/4

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sa	mple
Prep Type: Tot	al/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	9.47		ug/L		95	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	9.66		ug/L		97	60 - 140	
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	70 - 130	
1,1-Dichloroethane	10.0	9.59		ug/L		96	70 - 130	

Eurofins TestAmerica, Pittsburgh

11/18/2021

Page 19 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-377745/4

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

1,1-Dichloroethene 10.0 11.2 ug/L 112 50.150 1,2-Dichloroethane 10.0 9.86 ug/L 99 70.130 1,2-Dichloropenpane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.5 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 2-Chlorobethyl vinyl ether 20.0 6.59 ug/L 33 10.170 Acrolein 30.0 30.0 ug/L 100 60.140 Acrolein 30.0 10.5 ug/L 100 60.140 Bermonderbane 10.0 10.5	Analysis Batch: 017140	Spike	LCS	LCS				%Rec.
1,2-Dichloroethane 10.0 9.86 ug/L 99 70.130 1,2-Dichloropropane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichlorobenzene 10.0 10.1 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 10.1 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 107 10.170 1,3-Dichloropenzene 10.0 10.3 ug/L 10.1 10.170 1,3-Dichloropenzene 10.0 10.0 ug/L 10.0 60.140 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1	Analyte	Added	Result	Qualifier	Unit	D %	Rec	Limits
1,2-Dichloropropane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.1 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 111 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 106 70.130 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 13.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 13.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 103 70.130 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.3 ug/L 113 65.135 1,0-Dichloropropene 10.0 11.3 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.3 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.9 ug/L 119 70.135 1,0-Dichloropropene 10.	1,1-Dichloroethene	10.0	11.2		ug/L		112	50 - 150
1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65 - 135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70 - 130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65 - 135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrolein 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 10.5 ug/L 106 70 - 130 Bromofentane 10.0 10.5 ug/L 106 70 - 130 Bromoform 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 10.0 ug/L 105 65 - 135 Bromoform 10.0 10.0 ug/L 100 60 - 140 Bromoform 10.0 10.0 ug/L 100 70 - 130 Bromoform 10.0 10.3 ug/L 103 60 - 140 Bromoform 10.0 10.3 ug/L 103 70 - 130 Bromoform 10.0 10.3 ug/L 103	1,2-Dichloroethane	10.0	9.86		ug/L		99	70 - 130
1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70-130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65-135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10-170 Acrolein 30.0 30.0 ug/L 100 60-140 Acrylonitrile 100 111 ug/L 111 60-140 3-Acrylonitrile 100 111 ug/L 111 60-140 3-Acrylonitrile 100 115 ug/L 105 65-135 3-35 3-35 3-35 3-35 3-35 3-35 3-35	1,2-Dichloropropane	10.0	9.99		ug/L		100	35 - 165
10.0 10.3 ug/L 10.3 65 - 135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 2-Chloroethyl vinyl ether 30.0 30.0 ug/L 100 60 - 140 2-Chloroethyl vinyl ether 100 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 110 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl vinyl ether 10.0 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl vinyl ether 10.0 10.0 10.6 ug/L 106 70 - 130 2-Chloroethyl vinyl ether 10.0 10.5 ug/L 106 70 - 130 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug	1,2-Dichlorobenzene	10.0	10.2		ug/L		102	65 - 135
2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Carbon tetrachloride 10.0 10.5 ug/L 105 65 - 135 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 105 65 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 Cisis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Toluene 10.0 10.3 ug/L 103 70 - 130 Toluene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Winyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135 Chloromethane 10.0 10.7 ug/L 107 65 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloroethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 110 10 - 10 Chloromethane 10.0 11.9 ug/L 110 10 - 10 Chloromethane 10.0 11.9 ug/L 110	1,3-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Toluene 10.0 10.3 ug/L 103 70 - 130 Trans-1,2-Dichloroethene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 113 65 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135	1,4-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135
Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 7.73 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 102 70 - 135 Chloromethane 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 13.5 ug/L 136 65 - 1370 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.0 ug/L 100 70 - 130 Tetrachloroethene 10.0 10.0 ug/L 103 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Trans-1,2-Dichloropropene 10.0 11.4 ug/L 103 70 - 130 Trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135	2-Chloroethyl vinyl ether	20.0	6.59		ug/L		33	10 - 170
Benzene 10.0 10.5 ug/L 105 65 - 135 Benzene 10.0 14.2 *+ ug/L 142 70 - 130 Benzene 10.0 14.2 *+ ug/L 142 70 - 130 Benzene 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Cethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Tetrachloroethene 10.0 9.74 ug/L 97 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 103 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 103 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 114 50 - 150 Trichloroethene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Winyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Beromodichloromethane 10.0 10.7 ug/L 107 65 - 135 Beromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Acrolein	30.0	30.0		ug/L		100	60 - 140
Stromoform 10.0 14.2 *+ ug/L 142 *70.130 15.170 10.0	Acrylonitrile	100	111		ug/L		111	60 - 140
Bromomethane 10.0 9.27 ug/L 93 15 - 170	Benzene	10.0	10.5		ug/L		105	65 - 135
Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Methylene Chloride 10.0 10.0 ug/L 100 70 - 130 Totrachloroethene 10.0 10.0 ug/L 97 70 - 130 Totluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 11 65 - 135 Vinyl chl	Bromoform	10.0	14.2	*+	ug/L		142	70 - 130
Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135	Bromomethane	10.0	9.27		ug/L		93	15 - 170
Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Carbon tetrachloride	10.0	10.6		ug/L		106	70 - 130
Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chlorobenzene	10.0	10.5		ug/L		105	65 - 135
cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chloroform	10.0	10.2		ug/L		102	70 - 135
Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chloromethane	10.0	7.73		ug/L		77	10 - 170
Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	cis-1,3-Dichloropropene	10.0	13.5		ug/L		135	25 - 170
Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Ethylbenzene	10.0	10.0		ug/L		100	60 - 140
Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Methylene Chloride	10.0	10.3		ug/L		103	60 - 140
trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Tetrachloroethene	10.0	10.0		ug/L		100	70 - 130
trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Toluene	10.0	9.74		ug/L		97	70 - 130
Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	trans-1,3-Dichloropropene	10.0	11.4		ug/L		114	50 - 150
Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Trichloroethene	10.0	11.3		ug/L		113	65 - 135
Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Vinyl chloride	10.0	7.08		ug/L		71	10 - 170
	Dibromochloromethane	10.0	11.9		ug/L		119	70 - 135
Chloroethane 10.0 8.32 ug/L 83 40 - 160	Bromodichloromethane	10.0	10.7		ug/L		107	65 - 135
· · · · · · · · · · · · · · · · · · ·	Chloroethane	10.0	8.32		ug/L		83	40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		28 - 163
4-Bromofluorobenzene (Surr)	93		41 - 122
Toluene-d8 (Surr)	93		53 - 125
Dibromofluoromethane (Surr)	114		59 - 168

Lab Sample ID: LCSD 180-377745/6

Matrix: Water

Analysis Batch: 377745

Client Sample II	ጋ: Lab	Control	Sam	ple Dup
		Prep T	ype: T	otal/NA

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	9.54		ug/L		95	70 - 130	1	20
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140	5	20
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130	2	20
1,1-Dichloroethane	10.0	9.89		ug/L		99	70 - 130	3	20
1,1-Dichloroethene	10.0	11.8		ug/L		118	50 - 150	6	20
1,2-Dichloroethane	10.0	10.8		ug/L		108	70 - 130	9	20
1,2-Dichloropropane	10.0	10.6		ug/L		106	35 - 165	5	20
1,2-Dichlorobenzene	10.0	9.80		ug/L		98	65 - 135	4	20

Eurofins TestAmerica, Pittsburgh

11/18/2021

Page 20 of 44

Project/Site: Cytec Havre de Grace MD

Job ID: 180-129527-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 180-377745/6

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD		%Rec.				
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130	2	20
1,4-Dichlorobenzene	10.0	9.93		ug/L		99	65 - 135	4	20
2-Chloroethyl vinyl ether	20.0	7.98		ug/L		40	10 - 170	19	20
Acrolein	30.0	27.1		ug/L		90	60 - 140	10	20
Acrylonitrile	100	118		ug/L		118	60 - 140	6	20
Benzene	10.0	10.9		ug/L		109	65 - 135	4	20
Bromoform	10.0	13.7	*+	ug/L		137	70 - 130	4	20
Bromomethane	10.0	7.03	*1	ug/L		70	15 - 170	28	20
Carbon tetrachloride	10.0	8.91		ug/L		89	70 - 130	17	20
Chlorobenzene	10.0	10.0		ug/L		100	65 - 135	5	20
Chloroform	10.0	10.5		ug/L		105	70 - 135	3	20
Chloromethane	10.0	8.24		ug/L		82	10 - 170	6	20
cis-1,3-Dichloropropene	10.0	14.1		ug/L		141	25 - 170	4	20
Ethylbenzene	10.0	9.47		ug/L		95	60 - 140	6	20
Methylene Chloride	10.0	11.0		ug/L		110	60 - 140	6	20
Tetrachloroethene	10.0	9.31		ug/L		93	70 - 130	7	20
Toluene	10.0	9.33		ug/L		93	70 - 130	4	20
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130	1	20
trans-1,3-Dichloropropene	10.0	11.2		ug/L		112	50 - 150	2	20
Trichloroethene	10.0	10.8		ug/L		108	65 - 135	5	20
Vinyl chloride	10.0	7.10		ug/L		71	10 - 170	0	20
Dibromochloromethane	10.0	11.8		ug/L		118	70 - 135	1	20
Bromodichloromethane	10.0	12.3		ug/L		123	65 - 135	14	20
Chloroethane	10.0	7.98		ug/L		80	40 - 160	4	20

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		28 - 163
4-Bromofluorobenzene (Surr)	89		41 - 122
Toluene-d8 (Surr)	89		53 - 125
Dibromofluoromethane (Surr)	124		59 - 168

Lab Sample ID: MB 180-377976/6

Matrix: Water

Analysis Batch: 377976

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB RLMDL Unit Analyte Result Qualifier Prepared Analyzed Dil Fac 1,2-Dichloroethane ND 1.0 0.57 ug/L 11/07/21 18:37

ı		MB	MB				
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	94		28 - 163		11/07/21 18:37	1
	4-Bromofluorobenzene (Surr)	93		41 - 122		11/07/21 18:37	1
	Toluene-d8 (Surr)	86		53 - 125		11/07/21 18:37	1
	Dibromofluoromethane (Surr)	105		59 - 168		11/07/21 18:37	1

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

MB MB

Lab Sample ID: LCS 180-377976/3

Matrix: Water

1,2-Dichloroethane

Analyte

Analysis Batch: 377976

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 113 28 - 163 4-Bromofluorobenzene (Surr) 89 41 - 122 Toluene-d8 (Surr) 86 53 - 125 Dibromofluoromethane (Surr) 59 - 168 119

Lab Sample ID: MB 180-378019/8

Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 378019

Prep Type: Total/NA

RL **MDL** Unit Dil Fac Result Qualifier D Analyte Prepared Analyzed 1,1,1-Trichloroethane ND 1.0 0.60 ug/L 11/08/21 13:40 1,1,2,2-Tetrachloroethane ND 1.0 0.60 11/08/21 13:40 ug/L 1,1,2-Trichloroethane ND 1.0 0.45 ug/L 11/08/21 13:40 1,1-Dichloroethane ND 1.0 0.31 ug/L 11/08/21 13:40 1,1-Dichloroethene ND 1.0 0.55 ug/L 11/08/21 13:40 1,2-Dichloroethane ND 1.0 0.57 ug/L 11/08/21 13:40 ND 1,2-Dichloropropane 1.0 0.66 ug/L 11/08/21 13:40 1,2-Dichlorobenzene ND 1.0 0.36 ug/L 11/08/21 13:40 1 3-Dichlorobenzene ND 1.0 0.50 ug/L 11/08/21 13:40 11/08/21 13:40 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 11/08/21 13:40 Acrolein 20 11/08/21 13:40 ND 16 ug/L ND 20 7.8 ug/L Acrylonitrile 11/08/21 13:40 Benzene ND 1.0 0.60 ug/L 11/08/21 13:40 Bromoform ND 1.0 0.98 ug/L 11/08/21 13:40 Bromomethane ND 1.0 0.89 ug/L 11/08/21 13:40 Carbon tetrachloride ND 1.0 0.88 ug/L 11/08/21 13:40 Chlorobenzene ND 1.0 0.50 ug/L 11/08/21 13:40 Chloroform ND 1.0 0.60 ug/L 11/08/21 13:40 Chloromethane ND 0.90 ug/L 1.0 11/08/21 13:40 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/08/21 13:40 Ethylbenzene ND 0.51 ug/L 1.0 11/08/21 13:40 Methylene Chloride ND 1.0 0.89 ug/L 11/08/21 13:40 Tetrachloroethene ND 0.47 ug/L 1.0 11/08/21 13:40 Toluene ND 1.0 0.46 ug/L 11/08/21 13:40 trans-1.2-Dichloroethene ND 1.0 0.67 ug/L 11/08/21 13:40 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/08/21 13:40 Trichloroethene ND 11/08/21 13:40 1.0 0.69 ug/L Vinyl chloride ND 1.0 0.40 ug/L 11/08/21 13:40 Dibromochloromethane ND 1.0 0.84 ug/L 11/08/21 13:40 Bromodichloromethane ND 1.0 0.64 ug/L 11/08/21 13:40 Chloroethane ND 1.0 0.90 ug/L 11/08/21 13:40 MB MB

 Surrogate
 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 1,2-Dichloroethane-d4 (Surr)
 91
 28 - 163
 11/08/21 13:40
 1

Eurofins TestAmerica, Pittsburgh

Page 22 of 44

3

4

6

8

10

10

13

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378019/8

Matrix: Water

Analysis Batch: 378019

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68		41 - 122		11/08/21 13:40	1
Toluene-d8 (Surr)	89		53 - 125		11/08/21 13:40	1
Dibromofluoromethane (Surr)	114		59 - 168		11/08/21 13:40	1

Lab Sample ID: LCS 180-378019/5

Matrix: Water

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

Dibromochloromethane

Bromodichloromethane

Trichloroethene

Vinyl chloride

Chloroethane

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 378019 Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits Analyte 1,1,1-Trichloroethane 10.0 7.14 ug/L 71 70 - 130 ug/L 10.0 9.67 97 60 - 1401,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 10.0 10.4 ug/L 104 70 - 130 1,1-Dichloroethane 10.0 8.56 ug/L 86 70 - 130 1,1-Dichloroethene 10.0 10.8 ug/L 108 50 - 150 1,2-Dichloroethane 10.0 8.37 ug/L 84 70 - 130 10.0 95 35 - 165 1,2-Dichloropropane 9.45 ug/L 1,2-Dichlorobenzene 73 10.0 7.25 ug/L 65 - 1351.3-Dichlorobenzene 10.0 ug/L 94 70 - 130 9.42 1,4-Dichlorobenzene 10.0 8.85 ug/L 89 65 - 135 2-Chloroethyl vinyl ether 20.0 5.81 ug/L 29 10 - 170 Acrolein 30.0 29.2 97 60 - 140 ug/L 100 117 Acrylonitrile 117 ug/L 60 - 140 Benzene 10.0 9.72 ug/L 97 65 - 135**Bromoform** 10.0 11.8 118 70 - 130 ug/L Bromomethane 10.0 7.95 ug/L 79 15 - 170 Carbon tetrachloride 10.0 7.14 ug/L 71 70 - 130 Chlorobenzene 10.0 9.34 ug/L 93 65 - 135Chloroform 10.0 82 70 - 135 8.24 ug/L 67 Chloromethane 10.0 6.71 ug/L 10 - 170 cis-1,3-Dichloropropene 10.0 11.4 ug/L 114 25 - 170 Ethylbenzene 10.0 86 60 - 1408.64 ug/L Methylene Chloride 10.0 10.4 ug/L 104 60 - 140 70 - 130 10.0 83 Tetrachloroethene 8.27 ug/L Toluene 10.0 8.60 ug/L 86 70 - 130

10.0

10.0

10.0

10.0

10.0

10.0

10.0

9.82

9.22

9.91

6.06

9.74

9.16

7.80

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

98

92

99

61

97

92

78

70 - 130

50 - 150

65 - 135

10 - 170

70 - 135

65 - 135

40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		28 - 163
4-Bromofluorobenzene (Surr)	78		41 - 122
Toluene-d8 (Surr)	83		53 - 125
Dibromofluoromethane (Surr)	99		59 - 168

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11/18/2021

Page 23 of 44

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378302/8

Matrix: Water

Analysis Batch: 378302

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/09/21 17:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/09/21 17:44	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/09/21 17:44	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/09/21 17:44	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/09/21 17:44	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/09/21 17:44	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/09/21 17:44	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/09/21 17:44	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/09/21 17:44	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/09/21 17:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/09/21 17:44	1
Acrolein	ND		20	16	ug/L			11/09/21 17:44	1
Acrylonitrile	ND		20	7.8	ug/L			11/09/21 17:44	1
Benzene	ND		1.0	0.60	ug/L			11/09/21 17:44	1
Bromoform	ND		1.0	0.98	ug/L			11/09/21 17:44	1
Bromomethane	ND		1.0	0.89	ug/L			11/09/21 17:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/09/21 17:44	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/09/21 17:44	1
Chloroform	ND		1.0	0.60	ug/L			11/09/21 17:44	1
Chloromethane	ND		1.0	0.90	ug/L			11/09/21 17:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/09/21 17:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/09/21 17:44	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/09/21 17:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/09/21 17:44	1
Toluene	ND		1.0	0.46	ug/L			11/09/21 17:44	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/09/21 17:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/09/21 17:44	1
Trichloroethene	ND		1.0	0.69	ug/L			11/09/21 17:44	1
Vinyl chloride	ND		1.0		ug/L			11/09/21 17:44	1
Dibromochloromethane	ND		1.0		ug/L			11/09/21 17:44	1
Bromodichloromethane	ND		1.0		ug/L			11/09/21 17:44	1
Chloroethane	ND		1.0		ug/L			11/09/21 17:44	1

Surrogate	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	142	28 - 163		11/09/21 17:44	1
4-Bromofluorobenzene (Surr)	99	41 - 122		11/09/21 17:44	1
Toluene-d8 (Surr)	102	53 - 125		11/09/21 17:44	1
Dibromofluoromethane (Surr)	132	59 - 168		11/09/21 17:44	1

Lab Sample ID: LCS 180-378302/23

Matrix: Water

Analysis Batch: 378302

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	12.8		ug/L		128	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	6.36		ug/L		64	60 - 140	
1,1,2-Trichloroethane	10.0	7.79		ug/L		78	70 - 130	
1,1-Dichloroethane	10.0	11.5		ug/L		115	70 - 130	

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Client Sample ID: Lab Control Sample

Prep Type: Total/NA

11/18/2021

Page 24 of 44

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378302/23

Matrix: Water

Analysis Batch: 378302

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	10.0	12.9		ug/L		129	50 - 150
1,2-Dichloroethane	10.0	9.10		ug/L		91	70 - 130
1,2-Dichloropropane	10.0	9.47		ug/L		95	35 - 165
1,2-Dichlorobenzene	10.0	9.75		ug/L		98	65 - 135
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135
2-Chloroethyl vinyl ether	20.0	5.35		ug/L		27	10 - 170
Acrolein	30.0	20.5		ug/L		68	60 - 140
Acrylonitrile	100	36.6	*-	ug/L		37	60 - 140
Benzene	10.0	11.4		ug/L		114	65 - 135
Bromoform	10.0	9.91		ug/L		99	70 - 130
Bromomethane	10.0	10.1		ug/L		101	15 - 170
Carbon tetrachloride	10.0	13.9	*+	ug/L		139	70 - 130
Chlorobenzene	10.0	11.7		ug/L		117	65 - 135
Chloroform	10.0	12.9		ug/L		129	70 - 135
Chloromethane	10.0	9.02		ug/L		90	10 - 170
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	25 - 170
Ethylbenzene	10.0	11.9		ug/L		119	60 - 140
Methylene Chloride	10.0	11.8		ug/L		118	60 - 140
Tetrachloroethene	10.0	12.2		ug/L		122	70 - 130
Toluene	10.0	12.1		ug/L		121	70 - 130
trans-1,2-Dichloroethene	10.0	11.4		ug/L		114	70 - 130
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Vinyl chloride	10.0	10.1		ug/L		101	10 - 170
Dibromochloromethane	10.0	9.17		ug/L		92	70 - 135
Bromodichloromethane	10.0	11.6		ug/L		116	65 - 135
Chloroethane	10.0	10.8		ug/L		108	40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		28 - 163
4-Bromofluorobenzene (Surr)	101		41 - 122
Toluene-d8 (Surr)	106		53 - 125
Dibromofluoromethane (Surr)	110		59 - 168

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-378694/5

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 09:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 09:53	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/12/21 09:53	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/12/21 09:53	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 09:53	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 09:53	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/12/21 09:53	1
1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dichlorobenzene	ND ND ND ND		1.0 1.0 1.0 1.0	0.45 0.31 0.55 0.36	ug/L ug/L ug/L ug/L			11/12/21 09:53 11/12/21 09:53 11/12/21 09:53 11/12/21 09:53	1 1 1 1 1

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Page 25 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378694/5

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Method Blank

Prep Type: Total/NA

11/12/21 09:53

11/12/21 09:53

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,2-Dichloropropane ND 1.0 0.66 ug/L 11/12/21 09:53 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 11/12/21 09:53 ND 1,4-Dichlorobenzene 1.0 0.54 ug/L 11/12/21 09:53 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 11/12/21 09:53 ND 20 Acrolein 16 ug/L 11/12/21 09:53 Acrylonitrile ND 20 7.8 ug/L 11/12/21 09:53 Benzene ND 1.0 0.60 ug/L 11/12/21 09:53 0.98 ug/L **Bromoform** ND 1.0 11/12/21 09:53 11/12/21 09:53 Bromomethane ND 1.0 0.89 ug/L Carbon tetrachloride ND 1.0 0.88 ug/L 11/12/21 09:53 Chlorobenzene ND 1.0 0.50 ug/L 11/12/21 09:53 ND Dibromochloromethane 1.0 0.84 ug/L 11/12/21 09:53 Chloromethane ND 0.90 ug/L 1.0 11/12/21 09:53 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/12/21 09:53 1 Bromodichloromethane ND 1.0 0.64 ug/L 11/12/21 09:53 Chloroethane ND 1.0 0.90 ug/L 11/12/21 09:53 Ethylbenzene ND 1.0 0.51 ug/L 11/12/21 09:53 Methylene Chloride ND 1.0 0.89 ug/L 11/12/21 09:53 Tetrachloroethene ND 1.0 0.47 ug/L 11/12/21 09:53 Toluene ND 1.0 0.46 ug/L 11/12/21 09:53 0.67 ug/L trans-1,2-Dichloroethene ND 1.0 11/12/21 09:53 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/12/21 09:53 Trichloroethene ND 1.0 0.69 ug/L 11/12/21 09:53

мв мв

ND

ND

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91	41 - 122		/12/21 09:53	1
Toluene-d8 (Surr)	98	53 - 125	11	/12/21 09:53	1
1,2-Dichloroethane-d4 (Surr)	119	28 - 163	11	/12/21 09:53	1
Dibromofluoromethane (Surr)	118	59 - 168	11	/12/21 09:53	1

1.0

1.0

0.60 ug/L

0.40 ug/L

Chloroform

Vinyl chloride

Lab Sample ID: LCS 180-378694/3		Client Sample ID:	Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 378694			

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	8.74		ug/L		87	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	7.84		ug/L		78	60 - 140	
1,1,2-Trichloroethane	10.0	9.00		ug/L		90	70 - 130	
1,1-Dichloroethane	10.0	9.38		ug/L		94	70 - 130	
1,1-Dichloroethene	10.0	11.5		ug/L		115	50 - 150	
1,2-Dichlorobenzene	10.0	7.32		ug/L		73	65 - 135	
1,2-Dichloroethane	10.0	9.47		ug/L		95	70 - 130	
1,2-Dichloropropane	10.0	7.81		ug/L		78	35 - 165	
1,3-Dichlorobenzene	10.0	7.92		ug/L		79	70 - 130	
1,4-Dichlorobenzene	10.0	7.58		ug/L		76	65 - 135	
2-Chloroethyl vinyl ether	20.0	5.49		ug/L		27	10 - 170	

Eurofins TestAmerica, Pittsburgh

Page 26 of 44

10

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378694/3

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acrolein	30.0	21.8		ug/L		73	60 - 140	
Acrylonitrile	100	92.4		ug/L		92	60 - 140	
Benzene	10.0	9.12		ug/L		91	65 - 135	
Bromoform	10.0	12.6		ug/L		126	70 - 130	
Bromomethane	10.0	7.85		ug/L		78	15 - 170	
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130	
Chlorobenzene	10.0	8.43		ug/L		84	65 - 135	
Dibromochloromethane	10.0	9.66		ug/L		97	70 - 135	
Chloromethane	10.0	7.23		ug/L		72	10 - 170	
cis-1,3-Dichloropropene	10.0	11.9		ug/L		119	25 - 170	
Bromodichloromethane	10.0	8.99		ug/L		90	65 - 135	
Chloroethane	10.0	8.15		ug/L		82	40 - 160	
Ethylbenzene	10.0	7.51		ug/L		75	60 - 140	
Methylene Chloride	10.0	10.6		ug/L		106	60 - 140	
Tetrachloroethene	10.0	8.34		ug/L		83	70 - 130	
Toluene	10.0	8.30		ug/L		83	70 - 130	
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130	
trans-1,3-Dichloropropene	10.0	10.6		ug/L		106	50 - 150	
Trichloroethene	10.0	7.36		ug/L		74	65 - 135	
Chloroform	10.0	10.2		ug/L		102	70 - 135	
Vinyl chloride	10.0	8.13		ug/L		81	10 - 170	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		41 - 122
Toluene-d8 (Surr)	89		53 - 125
1,2-Dichloroethane-d4 (Surr)	120		28 - 163
Dibromofluoromethane (Surr)	96		59 - 168

Lab Sample ID: MB 180-378902/8

Matrix: Water

Analysis Batch: 378902

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/15/21 12:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/15/21 12:24	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/15/21 12:24	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/15/21 12:24	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/15/21 12:24	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/15/21 12:24	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/15/21 12:24	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/15/21 12:24	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/15/21 12:24	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/15/21 12:24	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/15/21 12:24	1
Acrolein	ND		20	16	ug/L			11/15/21 12:24	1
Acrylonitrile	ND		20	7.8	ug/L			11/15/21 12:24	1
Benzene	ND		1.0	0.60	ug/L			11/15/21 12:24	1
Bromoform	ND		1.0	0.98	ug/L			11/15/21 12:24	1

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Page 27 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378902/8

Matrix: Water

Analysis Batch: 378902

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Bromomethane ND 1.0 0.89 ug/L 11/15/21 12:24 Carbon tetrachloride ND 1.0 88.0 ug/L 11/15/21 12:24 Chlorobenzene ND 0.50 11/15/21 12:24 1.0 ug/L Dibromochloromethane ND 1.0 0.84 ug/L 11/15/21 12:24 Chloromethane ND 1.0 0.90 ug/L 11/15/21 12:24 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/15/21 12:24 Bromodichloromethane ND 1.0 0.64 ug/L 11/15/21 12:24 Chloroethane ND 1.0 0.90 ug/L 11/15/21 12:24 Ethylbenzene ND 1.0 0.51 ug/L 11/15/21 12:24 Methylene Chloride ND 1.0 0.89 ug/L 11/15/21 12:24 Tetrachloroethene ND 1.0 0.47 ug/L 11/15/21 12:24 Toluene ND 0.46 ug/L 11/15/21 12:24 1.0 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 11/15/21 12:24 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/15/21 12:24 Trichloroethene ND 1.0 0.69 ug/L 11/15/21 12:24 ND Chloroform 10 0.60 ug/L 11/15/21 12:24 Vinyl chloride ND 1.0 0.40 ug/L 11/15/21 12:24

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared Analy	zed	Dil Fac
	4-Bromofluorobenzene (Surr)	90		41 - 122	11/15/21	12:24	1
	Toluene-d8 (Surr)	100		53 - 125	11/15/21	12:24	1
	1,2-Dichloroethane-d4 (Surr)	132		28 - 163	11/15/21	12:24	1
İ	Dibromofluoromethane (Surr)	123		59 - 168	11/15/21	12:24	1

Lab Sample ID: LCS 180-378902/6

Matrix: Water

Dibromochloromethane

Analysis Batch: 378902

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Added **Analyte** Result Qualifier Unit %Rec Limits 1,1,1-Trichloroethane 10.0 8.78 ug/L 88 70 - 130 10.0 107 1,1,2,2-Tetrachloroethane 10.7 ug/L 60 - 1401,1,2-Trichloroethane 10.0 ug/L 113 70 - 130 11.3 ug/L 1,1-Dichloroethane 10.0 8 44 84 70 - 130 1,1-Dichloroethene 10.0 7.70 77 50 - 150 ug/L ug/L 10.0 8.96 90 65 - 135 1,2-Dichlorobenzene 1,2-Dichloroethane 10.0 10.5 ug/L 105 70 - 130 ug/L 1,2-Dichloropropane 10.0 8.67 87 35 - 165 93 1,3-Dichlorobenzene 10.0 9.31 ug/L 70 - 130 1.4-Dichlorobenzene 10.0 8.68 ug/L 87 65 - 1352-Chloroethyl vinyl ether 20.0 5.52 ug/L 28 10 - 170 Acrolein 30.0 27.6 ug/L 92 60 - 140 101 Acrylonitrile 100 101 ug/L 60 - 140 Benzene 10.0 8.90 89 ug/L 65 - 135Bromoform 10.0 16.4 *+ ug/L 164 70 - 130Bromomethane 10.0 9.56 ug/L 96 15 - 170 Carbon tetrachloride 10.0 8.76 ug/L 88 70 - 130 Chlorobenzene 10.0 9.17 ug/L 92 65 - 135

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70 - 135

117

Page 28 of 44

11.7

ug/L

10.0

10

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378902/6

Matrix: Water

Chloroform

Vinyl chloride

Analysis Batch: 378902

Client Sample ID: Lab Control Sample

70 - 135

10 - 170

99

Prep Type: Total/NA

· · · · · · · · · · · · · · · · · · ·							
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloromethane	10.0	6.69		ug/L		67	10 - 170
cis-1,3-Dichloropropene	10.0	11.9		ug/L		119	25 - 170
Bromodichloromethane	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	8.74		ug/L		87	40 - 160
Ethylbenzene	10.0	7.87		ug/L		79	60 - 140
Methylene Chloride	10.0	9.53		ug/L		95	60 - 140
Tetrachloroethene	10.0	9.52		ug/L		95	70 - 130
Toluene	10.0	9.54		ug/L		95	70 - 130
trans-1,2-Dichloroethene	10.0	8.08		ug/L		81	70 - 130
trans-1,3-Dichloropropene	10.0	12.4		ug/L		124	50 - 150
Trichloroethene	10.0	8 40		ua/l		84	65 - 135

10.0

10.0

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		41 - 122
Toluene-d8 (Surr)	104		53 - 125
1,2-Dichloroethane-d4 (Surr)	122		28 - 163
Dibromofluoromethane (Surr)	124		59 - 168

Lab Sample ID: MB 180-379035/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

9.86

8.54

ug/L

ug/L

Analysis Batch: 379035

-	MB I	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/16/21 13:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/16/21 13:40	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/16/21 13:40	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/16/21 13:40	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/16/21 13:40	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/16/21 13:40	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/16/21 13:40	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/16/21 13:40	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/16/21 13:40	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/16/21 13:40	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/16/21 13:40	1
Acrolein	ND		20	16	ug/L			11/16/21 13:40	1
Acrylonitrile	ND		20	7.8	ug/L			11/16/21 13:40	1
Benzene	ND		1.0	0.60	ug/L			11/16/21 13:40	1
Bromoform	ND		1.0	0.98	ug/L			11/16/21 13:40	1
Bromomethane	ND		1.0	0.89	ug/L			11/16/21 13:40	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/16/21 13:40	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/16/21 13:40	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/16/21 13:40	1
Chloromethane	ND		1.0	0.90	ug/L			11/16/21 13:40	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/16/21 13:40	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/16/21 13:40	1
Chloroethane	ND		1.0	0.90	ug/L			11/16/21 13:40	1

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Page 29 of 44

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-379035/7 Matrix: Water

Analysis Batch: 379035

Client Sample ID: Method Blank

Prep Type: Total/NA

Job ID: 180-129527-1

	MB MB							
Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND ND	1.0	0.51	ug/L			11/16/21 13:40	1
Methylene Chloride	ND	1.0	0.89	ug/L			11/16/21 13:40	1
Tetrachloroethene	ND	1.0	0.47	ug/L			11/16/21 13:40	1
Toluene	ND	1.0	0.46	ug/L			11/16/21 13:40	1
trans-1,2-Dichloroethene	ND	1.0	0.67	ug/L			11/16/21 13:40	1
trans-1,3-Dichloropropene	ND	1.0	0.58	ug/L			11/16/21 13:40	1
Trichloroethene	ND	1.0	0.69	ug/L			11/16/21 13:40	1
Chloroform	ND	1.0	0.60	ug/L			11/16/21 13:40	1
Vinyl chloride	ND	1.0	0.40	ug/L			11/16/21 13:40	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	86		41 - 122	_		11/16/21 13:40	1	
Toluene-d8 (Surr)	97		53 - 125			11/16/21 13:40	1	
1,2-Dichloroethane-d4 (Surr)	141		28 - 163			11/16/21 13:40	1	
Dibromofluoromethane (Surr)	139		59 - 168			11/16/21 13:40	1	

Lab Sample ID: LCS 180-379035/5

Matrix: Water

Analysis Batch: 379035

Client Sample ID: Lab Control Sample	
Prep Type: Total/NA	

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	9.74		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	8.61		ug/L		86	70 - 130
1,1-Dichloroethene	10.0	8.21		ug/L		82	50 - 150
1,2-Dichlorobenzene	10.0	9.05		ug/L		91	65 - 135
1,2-Dichloroethane	10.0	11.6		ug/L		116	70 - 130
1,2-Dichloropropane	10.0	9.31		ug/L		93	35 - 165
1,3-Dichlorobenzene	10.0	9.73		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	9.50		ug/L		95	65 - 135
2-Chloroethyl vinyl ether	20.0	4.12		ug/L		21	10 - 170
Acrolein	30.0	24.9		ug/L		83	60 - 140
Acrylonitrile	100	96.1		ug/L		96	60 - 140
Benzene	10.0	10.0		ug/L		100	65 - 135
Bromoform	10.0	14.2	*+	ug/L		142	70 - 130
Bromomethane	10.0	9.51		ug/L		95	15 - 170
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	65 - 135
Dibromochloromethane	10.0	12.6		ug/L		126	70 - 135
Chloromethane	10.0	8.73		ug/L		87	10 - 170
cis-1,3-Dichloropropene	10.0	12.6		ug/L		126	25 - 170
Bromodichloromethane	10.0	11.5		ug/L		115	65 - 135
Chloroethane	10.0	9.02		ug/L		90	40 - 160
Ethylbenzene	10.0	9.14		ug/L		91	60 - 140
Methylene Chloride	10.0	9.95		ug/L		100	60 - 140
Tetrachloroethene	10.0	9.84		ug/L		98	70 - 130
Toluene	10.0	9.87		ug/L		99	70 - 130

Eurofins TestAmerica, Pittsburgh

Page 30 of 44

2

3

6

8

10

11

12

-

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-379035/5

Matrix: Water

Analysis Batch: 379035

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
trans-1,2-Dichloroethene	10.0	8.32		ug/L		83	70 - 130	
trans-1,3-Dichloropropene	10.0	12.7		ug/L		127	50 - 150	
Trichloroethene	10.0	9.18		ug/L		92	65 - 135	
Chloroform	10.0	10.5		ug/L		105	70 - 135	
Vinyl chloride	10.0	9.10		ug/L		91	10 - 170	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		41 - 122
Toluene-d8 (Surr)	104		53 - 125
1,2-Dichloroethane-d4 (Surr)	120		28 - 163
Dibromofluoromethane (Surr)	117		59 - 168

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-378109/1-A

Matrix: Water

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch: 378351	МВ	МВ						Prep Batch:	378109
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND		0.19	0.065	ug/L		11/08/21 13:28	11/11/21 16:31	1
Acenaphthene	ND		0.19	0.065	ug/L		11/08/21 13:28	11/11/21 16:31	1
Anthracene	ND		0.19	0.049	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzidine	ND		20	9.1	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[a]anthracene	ND		0.19	0.075	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[b]fluoranthene	ND		0.19	0.097	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[k]fluoranthene	ND		0.19	0.088	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[g,h,i]perylene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[a]pyrene	ND		0.19	0.053	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-chloroethyl)ether	ND		0.19	0.040	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-ethylhexyl) phthalate	ND		10	6.2	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Bromophenyl phenyl ether	ND		1.0	0.32	ug/L		11/08/21 13:28	11/11/21 16:31	1
Butyl benzyl phthalate	ND		1.0	0.46	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Chloro-3-methylphenol	ND		1.0	0.28	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Chloronaphthalene	ND		0.19	0.059	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Chlorophenol	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
Chrysene	ND		0.19	0.081	ug/L		11/08/21 13:28	11/11/21 16:31	1
Dibenzo(a,h)-anthracene	ND		0.19	0.072	ug/L		11/08/21 13:28	11/11/21 16:31	1
Di-n-butyl phthalate	ND		1.0	0.74	ug/L		11/08/21 13:28	11/11/21 16:31	1
3,3'-Dichlorobenzidine	ND		1.0	0.58	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dichlorophenol	ND		0.19	0.051	ug/L		11/08/21 13:28	11/11/21 16:31	1
Diethyl phthalate	ND		1.0	0.57	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dimethylphenol	ND		1.0	0.17	ug/L		11/08/21 13:28	11/11/21 16:31	1
Dimethyl phthalate	ND		1.0	0.20	ug/L		11/08/21 13:28	11/11/21 16:31	1
4,6-Dinitro-2-methylphenol	ND		5.0	1.5	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dinitrophenol	ND		10	1.5	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dinitrotoluene	ND		1.0	0.35	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,6-Dinitrotoluene	ND		1.0	0.17	ug/L		11/08/21 13:28	11/11/21 16:31	1
Di-n-octyl phthalate	ND		1.0	0.69	ug/L		11/08/21 13:28	11/11/21 16:31	1
Fluoranthene	ND		0.19	0.060	ug/L		11/08/21 13:28	11/11/21 16:31	1

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Page 31 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

MB MB

Lab Sample ID: MB 180-378109/1-A

Matrix: Water

Analysis Batch: 378351

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378109

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorobenzene	ND		0.19	0.056	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorobutadiene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorocyclopentadiene	ND		1.0	0.50	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachloroethane	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.085	ug/L		11/08/21 13:28	11/11/21 16:31	1
Isophorone	ND		1.0	0.19	ug/L		11/08/21 13:28	11/11/21 16:31	1
Naphthalene	ND		0.19	0.059	ug/L		11/08/21 13:28	11/11/21 16:31	1
Nitrobenzene	ND		2.0	0.50	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Nitrophenol	ND		1.0	0.19	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Nitrophenol	ND		5.0	0.94	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodimethylamine	ND		1.0	0.067	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodiphenylamine	ND		1.0	0.12	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodi-n-propylamine	ND		0.19	0.071	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,2'-oxybis[1-chloropropane]	ND		0.19	0.058	ug/L		11/08/21 13:28	11/11/21 16:31	1
Pentachlorophenol	ND		5.0	0.85	ug/L		11/08/21 13:28	11/11/21 16:31	1
Phenanthrene	ND		0.19	0.055	ug/L		11/08/21 13:28	11/11/21 16:31	1
Phenol	ND		1.0	0.49	ug/L		11/08/21 13:28	11/11/21 16:31	1
Pyrene	ND		0.19	0.054	ug/L		11/08/21 13:28	11/11/21 16:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4,6-Trichlorophenol	ND		1.0	0.22	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-chloroethoxy)methane	ND		1.0	0.15	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Chlorophenyl phenyl ether	ND		1.0	0.22	ug/L		11/08/21 13:28	11/11/21 16:31	1
1,2-Diphenylhydrazine(as	ND		1.0	0.20	ug/L		11/08/21 13:28	11/11/21 16:31	1

Surrogate	%Recovery C	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	67		47 - 107	11/08/21 13:28	11/11/21 16:31	1
2-Fluorophenol	75		35 - 109	11/08/21 13:28	11/11/21 16:31	1
2,4,6-Tribromophenol	58		32 - 127	11/08/21 13:28	11/11/21 16:31	1
Nitrobenzene-d5	71		47 - 110	11/08/21 13:28	11/11/21 16:31	1
Phenol-d5	81		37 - 110	11/08/21 13:28	11/11/21 16:31	1
Terphenyl-d14	83		32 - 115	11/08/21 13:28	11/11/21 16:31	1

Lab Sample ID: LCS 180-378109/2-A

Matrix: Water

Azobenzene)

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Batch: 378109

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 10.0 6.95 70 Acenaphthylene ug/L 33 - 145 ug/L Acenaphthene 10.0 6.72 67 47 - 145 Anthracene 10.0 8.07 81 ug/L 27 - 133 Benzidine 10.0 ND ug/L 14 5 - 100 33 - 143 10.0 76 Benzo[a]anthracene 7.64 ug/L Benzo[b]fluoranthene 10.0 5.28 ug/L 53 24 - 150 Benzo[k]fluoranthene 10.0 5.84 ug/L 58 11 - 150 Benzo[g,h,i]perylene 10.0 ug/L 59 5.88 10 - 150 Benzo[a]pyrene 10.0 ug/L 56 17 - 150 5.62 74 12 - 150 Bis(2-chloroethyl)ether 10.0 7.37 ug/L

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Page 32 of 44

Prep Type: Total/NA

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1

Spike

LCS LCS

Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sam	ple ID:	LCS 18	80-378 1	109/2-A
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Matrix: Water

Surrogate

2-Fluorobiphenyl

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 378109 %Rec.

Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits
Bis(2-ethylhexyl) phthalate	10.0	7.69	J	ug/L		10 - 150
4-Bromophenyl phenyl ether	10.0	6.79		ug/L	68	53 - 127
Butyl benzyl phthalate	10.0	7.86		ug/L	79	10 - 150
4-Chloro-3-methylphenol	10.0	7.71		ug/L	77	22 - 147
2-Chloronaphthalene	10.0	6.57		ug/L	66	60 - 120
2-Chlorophenol	10.0	7.59		ug/L	76	23 - 134
Chrysene	10.0	7.89		ug/L	79	17 - 150
Dibenzo(a,h)-anthracene	10.0	5.80		ug/L	58	10 - 150
Di-n-butyl phthalate	10.0	8.13		ug/L	81	10 - 120
3,3'-Dichlorobenzidine	10.0	6.06		ug/L	61	10 - 150
2,4-Dichlorophenol	10.0	7.05		ug/L	71	39 - 135
Diethyl phthalate	10.0	7.02		ug/L	70	10 - 120
2,4-Dimethylphenol	10.0	7.22		ug/L	72	32 - 120
Dimethyl phthalate	10.0	7.13		ug/L	71	10 - 120
I,6-Dinitro-2-methylphenol	20.0	12.9		ug/L	65	10 - 150
2,4-Dinitrophenol	20.0	9.14	J	ug/L	46	10 - 150
2,4-Dinitrotoluene	10.0	7.49	•	ug/L	75	39 - 139
2,6-Dinitrotoluene	10.0	7.42		ug/L	74	50 - 150
Di-n-octyl phthalate	10.0	5.34		ug/L	53	10 - 146
Fluoranthene	10.0	7.89		ug/L	79	26 - 137
luorene	10.0	7.13		ug/L	71	59 - 121
Hexachlorobenzene	10.0	6.41		ug/L	64	10 - 150
dexachlorobutadiene	10.0	6.17		ug/L ug/L	62	24 - 120
Hexachlorocyclopentadiene	10.0	5.59		ug/L	56	37 - 121
dexactionocyclopertradiene dexactionocyclopertradiene	10.0	7.98			80	40 - 120
	10.0	7.96 5.76		ug/L	58	10 - 150
ndeno[1,2,3-cd]pyrene				ug/L		
sophorone	10.0 10.0	7.21		ug/L	72	21 - 150
Naphthalene		6.98		ug/L	70	21 - 133
Vitrobenzene	10.0	7.19		ug/L	72	35 - 150
2-Nitrophenol	10.0	7.06		ug/L	71	29 - 150
-Nitrophenol	20.0	15.1		ug/L	76	10 - 132
N-Nitrosodimethylamine	10.0	7.34		ug/L	73	33 - 130
I-Nitrosodiphenylamine	10.0	7.14		ug/L	71	51 - 100
I-Nitrosodi-n-propylamine	10.0	8.18		ug/L	82	10 - 150
2,2'-oxybis[1-chloropropane]	10.0	6.54		ug/L	65	36 - 150
Pentachlorophenol	20.0	13.0		ug/L	65	14 - 150
Phenanthrene	10.0	7.92		ug/L	79	54 - 120
Phenol	10.0	7.60		ug/L	76	10 - 120
Pyrene	10.0	7.80		ug/L	78	52 - 120
,2,4-Trichlorobenzene	10.0	6.59		ug/L	66	44 - 142
2,4,6-Trichlorophenol	10.0	6.63		ug/L	66	37 - 144
Bis(2-chloroethoxy)methane	10.0	6.96		ug/L	70	33 - 150
4-Chlorophenyl phenyl ether	10.0	6.49		ug/L	65	25 - 150
1,2-Diphenylhydrazine(as	10.0	8.06		ug/L	81	43 - 105
Azobenzene)						

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Page 33 of 44

Limits

47 - 107

%Recovery Qualifier

68

6

8

10

12

1.

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378109/2-A

Matrix: Water

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378109

	LCS		
Surrogate	%Recovery	Qualifier	Limits
2-Fluorophenol	80		35 - 109
2,4,6-Tribromophenol	69		32 - 127
Nitrobenzene-d5	77		47 - 110
Phenol-d5	82		37 - 110

73

Sample Sample

Lab Sample ID: 180-129527-1 MS

Matrix: Water

Terphenyl-d14

Analysis Batch: 378351

Client Sample ID: POTW OUTFALL(110221)

Prep Type: Total/NA

Prep Batch: 378109

MS MS

32 - 115

Spike

10

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene	ND		10.0	5.19		ug/L		52	35 - 145	
Acenaphthene	ND		10.0	5.03		ug/L		50	47 - 145	
Anthracene	ND		10.0	5.96		ug/L		60	27 - 133	
Benzidine	ND	F1	10.0	ND	F1	ug/L		0	5 - 100	
Benzo[a]anthracene	ND		10.0	6.07		ug/L		61	33 - 143	
Benzo[b]fluoranthene	ND		10.0	4.11		ug/L		41	24 - 159	
Benzo[k]fluoranthene	ND		10.0	4.42		ug/L		44	11 - 162	
Benzo[g,h,i]perylene	ND		10.0	4.67		ug/L		47	10 - 170	
Benzo[a]pyrene	ND		10.0	4.37		ug/L		44	17 - 163	
Bis(2-chloroethyl)ether	ND		10.0	5.28		ug/L		53	12 - 158	
Bis(2-ethylhexyl) phthalate	ND		10.0	7.45	J	ug/L		75	10 - 158	
4-Bromophenyl phenyl ether	ND		10.0	5.38		ug/L		54	53 - 127	
Butyl benzyl phthalate	ND		10.0	6.44		ug/L		64	10 - 152	
4-Chloro-3-methylphenol	ND		10.0	5.31		ug/L		53	22 - 147	
2-Chloronaphthalene	ND	F1	10.0	5.19	F1	ug/L		52	60 - 120	
2-Chlorophenol	ND		10.0	4.90		ug/L		49	23 - 134	
Chrysene	ND		10.0	6.16		ug/L		62	17 - 168	
Dibenzo(a,h)-anthracene	ND		10.0	4.53		ug/L		45	10 - 170	
Di-n-butyl phthalate	0.78	J	10.0	6.99		ug/L		62	10 - 120	
3,3'-Dichlorobenzidine	ND		10.0	4.50		ug/L		45	10 - 170	
2,4-Dichlorophenol	ND		10.0	4.88		ug/L		49	39 - 135	
Diethyl phthalate	ND		10.0	4.88		ug/L		49	10 - 120	
2,4-Dimethylphenol	ND		10.0	4.94		ug/L		49	32 - 120	
Dimethyl phthalate	ND		10.0	4.88		ug/L		49	10 - 120	
4,6-Dinitro-2-methylphenol	ND		20.0	9.69		ug/L		48	10 - 170	
2,4-Dinitrophenol	ND		20.0	8.03	J	ug/L		40	10 - 170	
2,4-Dinitrotoluene	ND		10.0	5.03		ug/L		50	39 - 139	
2,6-Dinitrotoluene	ND		10.0	4.98		ug/L		50	50 - 158	
Di-n-octyl phthalate	ND		10.0	4.69		ug/L		47	10 - 146	
Fluoranthene	ND		10.0	5.90		ug/L		59	26 - 137	
Fluorene	ND	F1	10.0	5.37	F1	ug/L		54	59 - 121	
Hexachlorobenzene	ND		10.0	5.16		ug/L		52	10 - 152	
Hexachlorobutadiene	ND		10.0	5.08		ug/L		51	24 - 120	
Hexachlorocyclopentadiene	ND	F1	10.0	3.97	F1	ug/L		40	41 - 106	
Hexachloroethane	ND		10.0	6.42		ug/L		64	40 - 120	
Indeno[1,2,3-cd]pyrene	ND		10.0	4.55		ug/L		45	10 - 170	
Isophorone	ND		10.0	5.35		ug/L		53	21 - 170	

Sample Sample

ND

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

MS MS

5.74

4.81

7.69

5.95

4.97

5.88

5.26

4.40

5.12

5.05

5.92

ug/L

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-129527-1 MS

Matrix: Water

Analysis Batch: 378351

N-Nitrosodi-n-propylamine

Pentachlorophenol

1,2,4-Trichlorobenzene

Bis(2-chloroethoxy)methane

4-Chlorophenyl phenyl ether

1,2-Diphenylhydrazine(as

2,4,6-Trichlorophenol

Phenanthrene

Phenol

Pyrene

2,2'-oxybis[1-chloropropane]

Client Sample ID: POTW OUTFALL(110221)

Prep Type: Total/NA

Prep Batch: 378109 %Rec.

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Naphthalene	ND		10.0	5.56		ug/L		56	21 - 133	
Nitrobenzene	ND		10.0	5.28		ug/L		53	35 - 170	
2-Nitrophenol	ND		10.0	4.75		ug/L		48	29 - 170	
4-Nitrophenol	ND		20.0	9.61		ug/L		48	10 - 132	
N-Nitrosodimethylamine	ND		10.0	5.22		ug/L		52	48 - 109	
N-Nitrosodiphenylamine	ND	F1	10.0	4.99	F1	ug/L		50	56 - 100	

10.0

10.0

20.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

Spike

50 56 - 100 57 10 - 170 48 36 - 166 38 17 - 170

60 54 - 120

50 10 - 120 59 52 - 120 53 44 - 142

44 37 - 144 51 33 - 170 50 25 - 158

46 - 103

59

Azobenzene)

MS MS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	54		47 - 107
2-Fluorophenol	53		35 - 109
2,4,6-Tribromophenol	47		32 - 127
Nitrobenzene-d5	54		47 - 110
Phenol-d5	56		37 - 110
Terphenyl-d14	60		32 - 115

Method: EPA 200.7 Rev 4 - Metals (ICP)

Lab Sample ID: MB 180-377852/1-A

Matrix: Water

Analysis Batch: 378321

Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 377852

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	5.7	ug/L		11/08/21 11:30	11/09/21 23:42	1
Cadmium	ND		5.0	0.33	ug/L		11/08/21 11:30	11/09/21 23:42	1
Chromium	ND		5.0	2.6	ug/L		11/08/21 11:30	11/09/21 23:42	1
Copper	ND		25	3.9	ug/L		11/08/21 11:30	11/09/21 23:42	1
Lead	ND		10	2.3	ug/L		11/08/21 11:30	11/09/21 23:42	1
Nickel	ND		40	2.1	ug/L		11/08/21 11:30	11/09/21 23:42	1
Silver	ND		5.0	0.87	ug/L		11/08/21 11:30	11/09/21 23:42	1
Zinc	ND		20	3.3	ug/L		11/08/21 11:30	11/09/21 23:42	1

Lab Sample ID: LCS 180-377852/2-A

Matrix: Water

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 377852 %Rec.

Analysis Batch: 378321 LCS LCS Spike Analyte Added Result Qualifier Unit Limits %Rec Arsenic 1000 1040 85 - 115 104 ug/L

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Page 35 of 44

Project/Site: Cytec Havre de Grace MD

Method: EPA 200.7 Rev 4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-377852/2-A **Matrix: Water**

Analysis Batch: 378321

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Prep Batch: 377852

Prep Type: Total/NA

Prep Batch: 377755

Job ID: 180-129527-1

Alialysis Batcii. 376321	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	500	503		ug/L		101	85 - 115
Chromium	500	478		ug/L		96	85 - 115
Copper	500	489		ug/L		98	85 - 115
Lead	500	482		ug/L		96	85 - 115
Nickel	500	487		ug/L		97	85 - 115
Silver	250	246		ug/L		98	85 - 115
Zinc	250	245		ug/L		98	85 - 115
-							

Method: EPA 245.1 Rev. - Mercury (CVAA)

Lab Sample ID: MB 180-377755/1-A **Client Sample ID: Method Blank**

Matrix: Water

Analysis Batch: 378250

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.20 11/05/21 08:16 11/09/21 10:16 Mercury 0.13 ug/L

Lab Sample ID: LCS 180-377755/2-A

Matrix: Water

Analyte

Mercury

Analysis Batch: 378250

Spike Added 2.50 Prep Type: Total/NA Prep Batch: 377755

%Rec

100

%Rec.

Limits 85 - 115

Client Sample ID: Lab Control Sample

Method: SM 4500CN E - Total Cyanide

Lab Sample ID: MB 180-378062/4-A

Matrix: Water

Cyanide, Total

Cyanide, Total

Analysis Batch: 378187

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378062

MB MB Analyte

Result Qualifier MDL Unit Prepared Analyzed Dil Fac ND ^+ 0.010 0.0080 mg/L 11/08/21 11:30 11/08/21 14:34

LCS LCS

2.49

Result Qualifier

Unit

ug/L

mg/L

Lab Sample ID: HLCS 180-378062/2-A

Matrix: Water

Analysis Batch: 378187

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 378062

HLCS HLCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits

Cyanide, Total 0.250 0.260 ^+ mg/L

Lab Sample ID: LCS 180-378062/3-A

Matrix: Water

Client Sample ID: Lab Control Sample Prep Type: Total/NA

90 - 110

90 - 110

Prep Batch: 378062

Analysis Batch: 378187 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 0.200 0.204 ^+

102

104

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10

Job ID: 180-129527-1 Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: SM 4500CN E - Total Cyanide (Continued)

Lab Sample ID: LLCS 180-378062/1-A **Matrix: Water**

Analysis Batch: 378187

Analyte Cyanide, Total

Spike Added 0.0500

LLCS LLCS 0.0519 ^+

Result Qualifier Unit

mg/L

D %Rec 104

Limits 90 - 110

%Rec.

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 378062

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 377745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-3	EW-1 (110221)	Total/NA	Water	EPA 624	
180-129527-4	EW-2 (110221)	Total/NA	Water	EPA 624	
180-129527-5	MW-10D(110221)	Total/NA	Water	EPA 624	
180-129527-6	EFFLUENT (110221)	Total/NA	Water	EPA 624	
180-129527-7	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-377745/9	Method Blank	Total/NA	Water	EPA 624	
LCS 180-377745/4	Lab Control Sample	Total/NA	Water	EPA 624	
LCSD 180-377745/6	Lab Control Sample Dup	Total/NA	Water	EPA 624	

Analysis Batch: 377976

Lab Sample ID 180-129527-3 - DL	Client Sample ID EW-1 (110221)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-377976/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-377976/3	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-4 - DL	EW-2 (110221)	Total/NA	Water	EPA 624	
180-129527-6 - DL	EFFLUENT (110221)	Total/NA	Water	EPA 624	
MB 180-378019/8	Method Blank	Total/NA	Water	EPA 624	
LCS 180-378019/5	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378302

Lab Sample ID 180-129527-5 - DL	Client Sample ID MW-10D(110221)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-378302/8	Method Blank	Total/NA	Water	EPA 624	
LCS 180-378302/23	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	EPA 624.1	
180-129527-2	TRIP BLANK	Total/NA	Water	EPA 624.1	
MB 180-378694/5	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-378694/3	Lab Control Sample	Total/NA	Water	EPA 624.1	

Analysis Batch: 378902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-2 - RA	TRIP BLANK	Total/NA	Water	EPA 624.1	
MB 180-378902/8	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-378902/6	Lab Control Sample	Total/NA	Water	FPA 624 1	

Analysis Batch: 379035

Lab Sample ID 180-129527-1 - DL	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method EPA 624.1	Prep Batch
MB 180-379035/7	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-379035/5	Lab Control Sample	Total/NA	Water	EPA 624.1	

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11/18/2021

Page 38 of 44

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15

13

QC Association Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

GC/MS Semi VOA

Prep Batch: 378109

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method 625	Prep Batch
MB 180-378109/1-A	Method Blank	Total/NA	Water	625	
LCS 180-378109/2-A	Lab Control Sample	Total/NA	Water	625	
180-129527-1 MS	POTW OUTFALL(110221)	Total/NA	Water	625	

Analysis Batch: 378351

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method EPA 625.1	Prep Batch 378109
MB 180-378109/1-A	Method Blank	Total/NA	Water	EPA 625.1	378109
LCS 180-378109/2-A	Lab Control Sample	Total/NA	Water	EPA 625.1	378109
180-129527-1 MS	POTW OUTFALL(110221)	Total/NA	Water	EPA 625.1	378109

Metals

Prep Batch: 377755

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method 245.1	Prep Batch
MB 180-377755/1-A	Method Blank	Total/NA	Water	245.1	
LCS 180-377755/2-A	Lab Control Sample	Total/NA	Water	245.1	

Prep Batch: 377852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total Recoverable	Water	200.7	
MB 180-377852/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 180-377852/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 378250

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method EPA 245.1 Rev.	Prep Batch 377755
MB 180-377755/1-A	Method Blank	Total/NA	Water	EPA 245.1 Rev.	377755
LCS 180-377755/2-A	Lab Control Sample	Total/NA	Water	EPA 245.1 Rev.	377755

Analysis Batch: 378321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total Recoverable	Water	EPA 200.7 Rev 4	377852
MB 180-377852/1-A	Method Blank	Total Recoverable	Water	EPA 200.7 Rev 4	377852
LCS 180-377852/2-A	Lab Control Sample	Total Recoverable	Water	EPA 200.7 Rev 4	377852

General Chemistry

Prep Batch: 378062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	SM 4500 CN C	
MB 180-378062/4-A	Method Blank	Total/NA	Water	SM 4500 CN C	
HLCS 180-378062/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LCS 180-378062/3-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LLCS 180-378062/1-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	

Analysis Batch: 378187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	SM 4500CN E	378062
MB 180-378062/4-A	Method Blank	Total/NA	Water	SM 4500CN E	378062

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Job ID: 180-129527-1

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QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

General Chemistry (Continued)

Analysis Batch: 378187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
HLCS 180-378062/2-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062
LCS 180-378062/3-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062
LLCS 180-378062/1-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062

Chain of Custody Record

Baltimore #201

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Environment Testing America

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te, Zip:						4	13.1						D - Nitric Acid	P - Na2O4S	
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Pittsburgh, PA 15238

Chain of Custody Record

Baltimore #201

💸 eurofins

Environment Testing America

Phone: 412-963-7058 Fax: 412-963-2468									π20			
Client Information	Sampler: D.K.com	werk	A.Feil	Lab F Colu	PM: ussy, J	Jill L			Carrier Tracki		COC No: 180-72855-1	14121.2
Client Contact: Ms. Shwetha Sridharan	Phone:443 -	936	-907	29 E-Ma		y@Eı	urofinset.co	om	State of Origin	"MO	Page: Page 2-ef 2	10ft 20f2
Company: ARCADIS U.S., Inc.		F	PWSID:					Analysis R	equested		Job #:	
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City: Hanover	TAT Requested (days):	j:									A - HCL B - NaOH C - Zn Acetate	M - Hexane N - None O - AsNaO2
State, Zip: MD, 21076	Compliance Project:	Δ Yes	Δ No		-	5					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
Phone: 302-897-8993(Tel)	PO#: 30005455.0002.				2	3	77		57		F - MeOH G - Amchlor H - Ascorbic A	R - Na2S2O3 S - H2SO4 cid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO#:				N IO	7 Hd	9				I - Ice	U - Acetone V - MCAA
Project Name: Cytec Havre de Grace MD	Project #: 18017987				ple (Yes or No	I D	EPAG			die	K - EDTA L - EDA Other:	W - pH 4-5 Z - other (specify)
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Part # 156297-435 RRDW2 EXT 08/22 7750.9854 4890 h UNITED STATES US

SAMPLE RECEIVING

TEST AMERICA PITTSBURGH 301 ALPHA DR RIDC PARK PITTSBURGH PA 15238 2) 963-7058 REF, ARCADIS CYTEC Uncorrected temp PT-WI-SR-001 effective 11/8/18 Thermometer ID (410) 869-0085 lift using this Initials WED PRIORITY 03 NOV PA-US OVERNI 11: PI 56DJ1/A\$22/FE4A

Page 43 of 44

Job Number: 180-129527-1

Login Number: 129527 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Greator. Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C

Monthly Compliance Reports – 2021



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

February 8, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – January 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of January 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of January 2021. The monthly certification form is included as Attachment A.

For the month of January, the system pumped an estimated 377,473 gallons of wastewater at an estimated average flow rate of 8.46 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 8.46 gallons per minute for the month of January satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of January.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of January and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of January.

No system shutdowns occurred during the reporting period. An EW-02 low flow alarm was received on January 26 and Arcadis staff cleaned and replaced the pump on February 3 to increase flow at this extraction well. The EW-02 vault leak alarm, which was first received on December 12, 2020, remains disabled, as the alarm continues to be triggered. Arcadis staff inspected EW-02 on December 15, 2020 and on February 3, 2021 and confirmed no visible leaks. Table 2 summarizes system operation during the reporting period.

The February 2021 Periodic Compliance Report will be submitted in March 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to ensure compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Amanda Turner, Arcadis

Table 1
Flow and pH Monitoring for January 2021
Cytec Solvay Group
Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	рН
01/01/21	16,951,756	3,934,054	2,832,342	23,718,152	14,446	5.62
01/02/21	16,961,107	3,935,763	2,835,728	23,732,598	14,357	
01/03/21	16,970,458	3,937,471	2,839,026	23,746,955	14,292	
01/04/21	16,979,809	3,939,182	2,842,256	23,761,247	14,175	
01/05/21	16,989,161	3,940,892	2,845,369	23,775,422	13,973	
01/06/21	16,998,512	3,942,600	2,848,283	23,789,395	13,662	
01/07/21	17,007,862	3,944,309	2,850,886	23,803,057	13,340	
01/08/21	17,017,213	3,946,015	2,853,169	23,816,397	12,887	5.65
01/09/21	17,026,565	3,947,722	2,854,997	23,829,284	12,545	
01/10/21	17,035,915	3,949,428	2,856,486	23,841,829	12,404	
01/11/21	17,045,266	3,951,136	2,857,831	23,854,233	12,289	
01/12/21	17,054,617	3,952,843	2,859,062	23,866,522	12,166	
01/13/21	17,063,986	3,954,549	2,860,153	23,878,688	12,032	
01/14/21	17,073,319	3,956,257	2,861,144	23,890,720	11,982	
01/15/21	17,082,670	3,957,966	2,862,066	23,902,702	11,929	5.70
01/16/21	17,092,020	3,959,674	2,862,937	23,914,631	11,799	
01/17/21	17,101,371	3,961,383	2,863,676	23,926,430	11,799	
01/18/21	17,110,722	3,963,093	2,864,415	23,938,229	11,799	
01/19/21	17,120,072	3,964,802	2,865,153	23,950,027	11,799	
01/20/21	17,129,423	3,966,511	2,865,892	23,961,826	11,323	
01/21/21	17,138,774	3,968,223	2,866,152	23,973,149	11,964	
01/22/21	17,148,123	3,969,927	2,867,063	23,985,113	11,574	5.60
01/23/21	17,157,473	3,971,631	2,867,583	23,996,687	11,537	
01/24/21	17,166,825	3,973,341	2,868,058	24,008,224	11,509	
01/25/21	17,176,176	3,975,053	2,868,504	24,019,733	11,501	
01/26/21	17,185,528	3,976,764	2,868,942	24,031,234	11,087	
01/27/21	17,194,879	3,978,477	2,868,965	24,042,321	11,063	
01/28/21	17,204,230	3,980,189	2,868,965	24,053,384	11,065	
01/29/21	17,213,582	3,981,902	2,868,965	24,064,449	11,065	5.78
01/30/21	17,222,933	3,983,616	2,868,965	24,075,514	11,064	
01/31/21	17,232,284	3,985,329	2,868,965	24,086,578	9,047	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for January 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
1/26/2021	EW-02 Low Flow	An EW-02 low flow alarm was received. Arcadis staff responded to this alarm on 2/3/2021. A routine system operation and maintenance event was conducted, including cleaning and replacement of the EW-02 extraction pump to increase flow at this extraction well.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	January 2021	
TOTAL VOLUME DISCHARGED	377,473 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accurat	document and all attachments were preparem designed to assure that qualified perso sed on my inquiry of the person or persons r gathering the information, the information see, and complete. I am aware that there are the possibility of fine and imprisonment for	nnel properly gather and who manage the system, submitted is, to the best of e significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

March 8, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – February 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of February 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of February 2021. The monthly certification form is included as Attachment A.

For the month of February, the system pumped an estimated 192,739 gallons of wastewater at an estimated average flow rate of 4.78 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 4.78 gallons per minute for the month of February satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of February.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of February and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of February.

EW-01 and EW-02 pipe leaks and P-100/P-200 drive fault alarms triggered automatic shutdowns during the reporting period. Arcadis staff cleaned and replaced the pump at EW-02 on February 3 as part of routine system O&M to increase flow at this extraction well. The EW-02 vault leak alarm, which was first received on December 12, 2020, remains disabled, as the alarm continues to be triggered. Arcadis staff inspected EW-02 on February 3, 2021 and confirmed no visible leaks. EW-01 and EW-02 pipe leak alarms are usually triggered during rain events when surface runoff infiltrates the vaults. After the EW-01 pipe leak alarm on February 1, the system was restarted remotely within 24 hours. The alarm was disabled as it remained triggered after the rain event. Arcadis staff reset the alarm on February 17. After the EW-02 pipe leak alarm on February 16, the system was restarted remotely within 24 hours. The EW-02 alarm is disabled, as the alarm continues to be triggered. Arcadis staff inspected the vault on February 17 and confirmed no visible leaks. P-100 and P-200 drive fault alarms may be triggered when the facility experiences power fluctuations and generally occur during weather events (i.e., heavy rainfall). For this

alarm on February 2, the alarm was cleared by on-site personnel and the system was restarted within 24 hours. The system remained shut down between February 3 and February 17 due to leaks within the system enclosure at well MW-10D. Most of the water generated during the repair of the system was collected and emptied into the system overflow tank, and all other water went into the floor drain within the system enclosure. The floor drain leads back to MW-10D. Replacement parts for the system were ordered and Arcadis staff repaired the leaking parts on February 17. Three consecutive pH results are reported since the system was shut down for more than 24 hours. Table 2 summarizes system operation during the reporting period.

The March 2021 Periodic Compliance Report will be submitted in April 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to ensure compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis

Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for February 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
02/01/21	17,239,930	3,986,730	2,868,965	24,095,625	9,661	
02/02/21	17,248,099	3,988,222	2,868,965	24,105,286	7,157	
02/03/21	17,254,151	3,989,327	2,868,965	24,112,443	491	
02/04/21	17,254,512	3,989,416	2,869,006	24,112,934	0	
02/05/21	17,254,512	3,989,416	2,869,006	24,112,934	0	
02/06/21	17,254,512	3,989,416	2,869,006	24,112,934	0	
02/07/21	17,254,512	3,989,416	2,869,006	24,112,934	0	
02/08/21	17,254,512	3,989,416	2,869,006	24,112,934	52	
02/09/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/10/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/11/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/12/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/13/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/14/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/15/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/16/21	17,254,563	3,989,416	2,869,007	24,112,986	0	
02/17/21	17,254,563	3,989,416	2,869,007	24,112,986	11,145	5.41
02/18/21	17,261,905	3,990,652	2,871,574	24,124,131	15,158	5.54
02/19/21	17,271,970	3,992,346	2,874,973	24,139,289	15,112	5.61
02/20/21	17,282,034	3,994,039	2,878,328	24,154,401	15,060	
02/21/21	17,292,099	3,995,735	2,881,627	24,169,461	15,005	
02/22/21	17,302,163	3,997,428	2,884,875	24,184,466	14,970	
02/23/21	17,312,227	3,999,121	2,888,088	24,199,436	14,921	
02/24/21	17,322,290	4,000,813	2,891,254	24,214,357	14,874	
02/25/21	17,332,352	4,002,506	2,894,373	24,229,231	14,836	
02/26/21	17,342,415	4,004,199	2,897,453	24,244,067	14,806	5.69
02/27/21	17,352,478	4,005,891	2,900,504	24,258,873	14,768	
02/28/21	17,362,540	4,007,584	2,903,517	24,273,641	14,723	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for February 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
2/1/2021	EW-01 Pipe Leak	An EW-01 pipe leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. The system was restarted remotely within 24 hours of shutting down. The alarm was disabled as the alarm continued to be active after the rain event. Arcadis staff reset the alarm on 2/17/21.
2/2/2021	P-100/P-200 Drive Fault	A P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by onsite personnel and the system was restarted within 24 hours.
2/3/2021	Routine System O&M	Arcadis staff onsite for routine O&M. Staff cleaned and replaced the EW-02 extraction pump. Multiple leaks were identified in the system enclosure; leaked water was collected in the floor drain within the system enclosure that drains back to MW-10D. Arcadis staff were unable to fix the leaks on 2/3 and on 2/8 as new parts needed to be ordered. Arcadis staff replaced leaking parts of system on 2/17/21 and restarted the system. Most of the leaked water was collecte and emptied into the system overflow tank, all other water went into a drain in the floor of the system enclosure which leads to MW-10D.
2/16/2021	EW-02 Pipe Leak	An EW-02 Pipe Leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-02 vault, triggering the leak alarm. The system was restarted remotely within 24 hours of shutting down. Arcadis staff inspected the vault on 2/17/2021 and confirmed there is no visible leak. The alarm was disabled as the alarm continued to be active after the rain event.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	February 2021
TOTAL VOLUME DISCHARGED	192,739 Gallons
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accura	document and all attachments were prepared under my direction of the designed to assure that qualified personnel properly gather and used on my inquiry of the person or persons who manage the system or gathering the information, the information submitted is, to the best of the te, and complete. I am aware that there are significant penalties for the possibility of fine and imprisonment for knowing violations."
 Date	Authorized Representative



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

April 14, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – March 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of March 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of March 2021. The monthly certification form is included as Attachment A.

For the month of March, the system pumped an estimated 327,760 gallons of wastewater at an estimated average flow rate of 7.34 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 7.34 gallons per minute for the month of March satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of March.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of March and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of March.

EW-01 pipe leaks triggered automatic shutdowns during the reporting period. EW-01 pipe leak alarms are usually triggered during rain events when surface runoff infiltrates the vaults. After the EW-01 pipe leak alarm on March 14, the system automatically shut down and triggered other alarms (MW-10D high level and high pH). Arcadis staff reset the alarm and restarted the system on March 22. Three consecutive pH results are reported since the system was shut down for more than 24 hours. After the EW-01 pipe leak alarm on March 24, the system was restarted within 24 hours. The EW-01 pipe leak alarm remains disabled as the alarm continues to be triggered. The EW-02 vault leak alarm, which was first received on December 12, 2020, remains disabled, as the alarm continues to be triggered. Arcadis staff inspected EW-02 on February 3, 2021 and confirmed no visible leaks.

The April 2021 Periodic Compliance Report will be submitted in May 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit

conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for March 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
03/01/21	17,372,603	4,009,277	2,906,484	24,288,364	14,680	
03/02/21	17,382,666	4,010,969	2,909,409	24,303,044	14,630	
03/03/21	17,392,729	4,012,662	2,912,283	24,317,674	14,571	
03/04/21	17,402,791	4,014,355	2,915,099	24,332,245	14,508	
03/05/21	17,412,854	4,016,048	2,917,851	24,346,753	14,450	5.69
03/06/21	17,422,917	4,017,742	2,920,544	24,361,203	14,402	
03/07/21	17,432,981	4,019,435	2,923,189	24,375,605	14,351	
03/08/21	17,443,046	4,021,128	2,925,782	24,389,956	14,300	
03/09/21	17,453,110	4,022,821	2,928,325	24,404,256	14,255	
03/10/21	17,463,170	4,024,514	2,930,827	24,418,511	14,847	
03/11/21	17,473,230	4,026,207	2,933,921	24,433,358	13,549	
03/12/21	17,483,288	4,027,898	2,935,721	24,446,907	13,727	5.67
03/13/21	17,493,095	4,029,548	2,937,991	24,460,634	11,640	
03/14/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/15/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/16/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/17/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/18/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/19/21	17,501,455	4,030,954	2,939,865	24,472,274	0	4.69
03/20/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/21/21	17,501,455	4,030,954	2,939,865	24,472,274	0	
03/22/21	17,501,455	4,030,954	2,939,865	24,472,274	12,931	4.76
03/23/21	17,510,214	4,032,427	2,942,564	24,485,205	13,926	5.63
03/24/21	17,519,687	4,034,019	2,945,425	24,499,131	14,754	5.64
03/25/21	17,529,748	4,035,711	2,948,426	24,513,885	14,726	
03/26/21	17,539,807	4,037,402	2,951,402	24,528,611	14,697	5.65
03/27/21	17,549,861	4,039,092	2,954,355	24,543,308	14,668	
03/28/21	17,559,918	4,040,783	2,957,275	24,557,976	14,625	
03/29/21	17,569,977	4,042,474	2,960,150	24,572,601	14,570	
03/30/21	17,580,038	4,044,166	2,962,967	24,587,171	14,511	
03/31/21	17,590,097	4,045,858	2,965,727	24,601,682	14,442	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.

Table 2 Operational Issues for March 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
3/12/2021	EW-01 Pipe Leak	An EW-01 pipe leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. The system was restarted remotely within 24 hours of shutting down.
3/14/2021	EW-01 Pipe Leak	An EW-01 pipe leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. The shutdown triggered other alarms (MW-10D high level, high pH) and required disabling all alarms in order to restart the system. Arcadis staff reset the alarms on 3/22/21.
3/24/2021	EW-01 Pipe Leak	An EW-01 pipe leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. The system was restarted remotely within 24 hours of shutting down.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	March 2021	
TOTAL VOLUME DISCHARGED	327,760 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accura	document and all attachments were preparem designed to assure that qualified personsed on my inquiry of the person or persons or gathering the information, the information ste, and complete. I am aware that there are the possibility of fine and imprisonment for	nnel properly gather and who manage the system, submitted is, to the best of e significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

May 10, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – April 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of April 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of April 2021. The monthly certification form is included as Attachment A.

For the month of April, the system pumped an estimated 396,643 gallons of wastewater at an estimated average flow rate of 9.18 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 9.18 gallons per minute for the month of April satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of April.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of April and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of April.

An EW-02 low flow alarm was received during the reporting period on April 12, 2021. Arcadis staff responded to this alarm on April 14, 2021 and cleaned and replaced the pump in EW-02. Routine operation and maintenance activities were also conducted between April 14 – 16, 2021 (well rehabilitation), and April 28 – 30, 2021 (pipe jetting). A high system pressure switch alarm was received on April 16, 2021, this was a faulty reading and the pressure gauge was replaced on April 28, 2021. The EW-02 vault leak alarm, which was first received on December 12, 2020, remains disabled, as the alarm continues to be triggered. Arcadis staff inspected EW-02 on February 3, 2021 and confirmed no visible leaks. Arcadis staff also confirmed no visible leaks during the April maintenance events, and well vault gaskets will be replaced to make the lids more watertight.

The May 2021 Periodic Compliance Report will be submitted in June 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit

conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

Mr. Luis Pizarro, United States Environmental Protection Agency cc:

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis

Ms. Amanda Turner, Arcadis

Table 1
Flow and pH Monitoring for April 2021
Cytec Solvay Group
Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
04/01/21	17,600,157	4,047,549	2,968,418	24,616,124	14,369	
04/02/21	17,610,219	4,049,242	2,971,032	24,630,493	14,289	5.68
04/03/21	17,620,282	4,050,934	2,973,566	24,644,782	14,213	
04/04/21	17,630,344	4,052,626	2,976,025	24,658,995	14,136	
04/05/21	17,640,403	4,054,317	2,978,411	24,673,131	14,059	
04/06/21	17,650,460	4,056,007	2,980,723	24,687,190	13,994	
04/07/21	17,660,517	4,057,698	2,982,969	24,701,184	13,895	
04/08/21	17,670,573	4,059,388	2,985,118	24,715,079	13,783	
04/09/21	17,680,629	4,061,079	2,987,154	24,728,862	13,634	5.69
04/10/21	17,690,690	4,062,770	2,989,036	24,742,496	13,383	
04/11/21	17,700,746	4,064,460	2,990,673	24,755,879	12,655	
04/12/21	17,710,801	4,066,150	2,991,583	24,768,534	12,000	
04/13/21	17,720,860	4,067,842	2,991,832	24,780,534	10,745	
04/14/21	17,730,059	4,069,388	2,991,832	24,791,279	4,518	
04/15/21	17,732,975	4,069,877	2,992,945	24,795,797	4,518	
04/16/21	17,735,890	4,070,367	2,994,057	24,800,314	4,518	4.75
04/17/21	17,738,806	4,070,856	2,995,170	24,804,832	15,488	
04/18/21	17,748,867	4,072,548	2,998,905	24,820,320	15,197	
04/19/21	17,758,926	4,074,240	3,002,351	24,835,517	15,104	
04/20/21	17,768,986	4,075,932	3,005,703	24,850,621	15,075	
04/21/21	17,779,042	4,077,623	3,009,031	24,865,696	15,052	
04/22/21	17,789,103	4,079,315	3,012,330	24,880,748	14,991	
04/23/21	17,799,167	4,081,008	3,015,564	24,895,739	14,823	5.69
04/24/21	17,809,227	4,082,700	3,018,635	24,910,562	14,804	
04/25/21	17,819,286	4,084,392	3,021,688	24,925,366	14,782	
04/26/21	17,829,344	4,086,083	3,024,721	24,940,148	14,762	
04/27/21	17,839,403	4,087,775	3,027,732	24,954,910	13,630	
04/28/21	17,848,299	4,089,273	3,030,968	24,968,540	14,742	
04/29/21	17,858,307	4,090,772	3,034,204	24,983,283	14,742	
04/30/21	17,868,315	4,092,270	3,037,440	24,998,025	14,742	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for April 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
4/12/2021	EW-02 Low Flow	An EW-02 low flow alarm was received. Arcadis staff responded to this alarm on 4/14/2021. A routine system operation and maintenance event was conducted, including cleaning and replacement of the EW-02 extraction pump to increase flow at this extraction well.
4/14/2021 - 4/16/2021	Routine O&M	Arcadis staff onsite for routine well rehab with subcontractors, Parratt-Wolff. Staff cleaned and replaced the EW-02 extraction pump.
4/16/2021	High System Pressure (Switch)	A high system pressure alarm was received at the end of routine O&M. The pressure gauge was faulty and was replaced on 4/28/2021.
4/28/2021 - 4/30/2021	Routine O&M	Arcadis staff onsite to conduct routine pipe jetting activites.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	April 2021	
TOTAL VOLUME DISCHARGED	396,643 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accurat	document and all attachments were preparem designed to assure that qualified personsed on my inquiry of the person or personsor gathering the information, the information te, and complete. I am aware that there are the possibility of fine and imprisonment for	onnel properly gather and who manage the system, submitted is, to the best of re significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

June 7, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – May 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of May 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of May 2021. The monthly certification form is included as Attachment A.

For the month of May, the system pumped an estimated 408,611 gallons of wastewater at an estimated average flow rate of 9.15 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 9.15 gallons per minute for the month of May satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of May.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of May and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of May.

An EW-02 low flow alarm was received during the reporting period on May 22, 2021. Arcadis staff had recently cleaned and replaced the pump in EW-02 on April 14, 2021. Arcadis staff responded to the alarm on May 26, 2021 and attempted to open the valve to increase flow, but were unsuccessful. Arcadis staff cleaned and replaced the pump in EW-02 on June 3, 2021 to increase flow at this extraction well. An Estop and P-100/P-200 Drive Fault alarms were received, and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. These alarms were cleared by on-site personnel and the system was restarted within 24 hours. The EW-02 vault leak alarm, which was first received on December 12, 2020, remains disabled, as the alarm continues to be triggered. Arcadis staff inspected EW-02 in February and April and confirmed no visible leaks, and well vault gaskets will be replaced to make the lids more watertight during the next O&M event

The June 2021 Periodic Compliance Report will be submitted in July 2021. Daily flow and pH will

continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis

Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for May 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
05/01/21	17,878,323	4,093,768	3,040,676	25,012,767	14,742	
05/02/21	17,888,331	4,095,267	3,043,912	25,027,510	14,742	
05/03/21	17,898,339	4,096,765	3,047,148	25,042,252	14,742	
05/04/21	17,908,347	4,098,263	3,050,384	25,056,994	14,742	
05/05/21	17,918,355	4,099,762	3,053,620	25,071,737	5,846	
05/06/21	17,919,467	4,101,260	3,056,856	25,077,583	15,796	
05/07/21	17,929,531	4,102,970	3,060,878	25,093,379	15,754	5.72
05/08/21	17,939,596	4,104,682	3,064,855	25,109,133	15,644	
05/09/21	17,949,664	4,106,396	3,068,717	25,124,777	15,553	
05/10/21	17,959,730	4,108,110	3,072,490	25,140,330	15,504	
05/11/21	17,969,794	4,109,818	3,076,222	25,155,834	15,454	
05/12/21	17,979,859	4,111,531	3,079,898	25,171,288	15,383	
05/13/21	17,989,923	4,113,239	3,083,509	25,186,671	15,311	
05/14/21	17,999,986	4,114,945	3,087,051	25,201,982	15,240	5.73
05/15/21	18,010,048	4,116,652	3,090,522	25,217,222	15,147	
05/16/21	18,020,111	4,118,362	3,093,896	25,232,369	15,037	
05/17/21	18,030,175	4,120,073	3,097,158	25,247,406	14,895	
05/18/21	18,040,236	4,121,780	3,100,285	25,262,301	14,575	
05/19/21	18,050,297	4,123,487	3,103,092	25,276,876	13,790	
05/20/21	18,060,355	4,125,190	3,105,121	25,290,666	12,766	
05/21/21	18,070,413	4,126,896	3,106,123	25,303,432	12,298	5.83
05/22/21	18,080,427	4,128,601	3,106,702	25,315,730	11,956	
05/23/21	18,090,527	4,130,298	3,106,861	25,327,686	11,749	
05/24/21	18,100,579	4,131,995	3,106,861	25,339,435	11,779	
05/25/21	18,110,643	4,133,709	3,106,862	25,351,214	11,768	
05/26/21	18,120,703	4,135,417	3,106,862	25,362,982	11,841	
05/27/21	18,130,757	4,137,116	3,106,950	25,374,823	11,755	
05/28/21	18,140,813	4,138,815	3,106,950	25,386,578	11,772	5.89
05/29/21	18,150,877	4,140,523	3,106,950	25,398,350	11,783	
05/30/21	18,160,946	4,142,237	3,106,950	25,410,133	11,245	
05/31/21	18,170,555	4,143,873	3,106,950	25,421,378	0	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for May 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response		
5/22/2021	EW-02 Low Flow	An EW-02 low flow alarm was received. The EW-02 pump had recently been cleaned and swapped out on 4/14/2021. Arcadis staff responded to this alarm on 5/26/2021 and attempted to open the valve to increase flow, but were unsuccessful. Arcadis staff responded to this alarm again on 6/3/2021 to clean and replace the EW-02 extraction pump to increase flow at this extraction well.		
5/31/2021	E-Stop, P-100/P-200 Drive Fault	An E-Stop and P-100/P-200 drive fault alarms was received and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. These alarms were cleared by on-site personnel and the system was restarted within 24 hours.		

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	May 2021	
TOTAL VOLUME DISCHARGED	408,611 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accura	document and all attachments were prepared designed to assure that qualified personated on my inquiry of the person or persons or gathering the information, the information ste, and complete. I am aware that there are the possibility of fine and imprisonment for	nnel properly gather and who manage the system, submitted is, to the best of e significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

July 9, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – June 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of June 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of June 2021. The monthly certification form is included as Attachment A.

For the month of June, the system pumped an estimated 242,129 gallons of wastewater at an estimated average flow rate of 5.60 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 5.60 gallons per minute for the month of June satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of June.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of June and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of June.

Arcadis staff cleaned and replaced the pump in EW-02 on June 3, 2021, to increase flow at this extraction well. Two E-Stop alarms (June 1 and 22, 2021) and one P-100/P-200 drive fault alarm (June 21, 2021) were received and the system automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. These alarms were cleared by on-site personnel and the system was restarted within 24 hours. A T-401 high level alarm was received on June 5, 2021, and the system automatically shut down. This alarm was triggered because the Kunkle value that was installed in September 2020 was leaking, which shut down the system and the flow of water to the Wastewater Treatment Plant. Arcadis staff responded to this alarm on June 14 and June 17, 2021 and changed the orientation of the valve to stop the leak and restart the system. Three consecutive daily pH readings are shown after the system was restarted on June 17, 2021. The EW-02 vault leak alarm, which was first received on December 12, 2020, was found to be triggered due to a corroded sensor, and was repaired on July 7, 2021, and Arcadis staff also replaced the vault gaskets to make the lids more watertight during the O&M event on July 8, 2021.

The July 2021 Periodic Compliance Report will be submitted in August 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis

Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for June 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
06/01/21	18,170,555	4,143,873	3,106,950	25,421,378	10,483	
06/02/21	18,179,525	4,145,386	3,106,950	25,431,861	11,751	
06/03/21	18,189,582	4,147,080	3,106,950	25,443,612	5,459	
06/04/21	18,193,188	4,147,686	3,108,197	25,449,071	13,409	5.66
06/05/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/06/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/07/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/08/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/09/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/10/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/11/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/12/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/13/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/14/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/15/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/16/21	18,201,930	4,149,156	3,111,394	25,462,480	0	
06/17/21	18,202,647	4,149,277	3,111,705	25,463,630	11,495	
06/18/21	18,209,817	4,150,492	3,114,816	25,475,125	16,074	5.65
06/19/21	18,219,875	4,152,198	3,119,126	25,491,199	16,038	5.73
06/20/21	18,229,933	4,153,900	3,123,404	25,507,237	15,955	5.75
06/21/21	18,239,987	4,155,596	3,127,609	25,523,192	7,191	
06/22/21	18,244,524	4,156,359	3,129,500	25,530,383	10,483	
06/23/21	18,251,230	4,157,501	3,132,135	25,540,866	15,633	
06/24/21	18,261,294	4,159,211	3,135,994	25,556,499	15,598	
06/25/21	18,271,356	4,160,921	3,139,820	25,572,097	15,554	5.79
06/26/21	18,281,416	4,162,631	3,143,604	25,587,651	15,511	
06/27/21	18,291,474	4,164,341	3,147,347	25,603,162	15,451	_
06/28/21	18,301,530	4,166,048	3,151,035	25,618,613	15,402	
06/29/21	18,311,586	4,167,755	3,154,674	25,634,015	15,361	
06/30/21	18,321,641	4,169,461	3,158,274	25,649,376	15,281	_

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for June 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
6/1/2021	E-Stop	An E-Stop alarm was received and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. This alarm was cleared by on-site personnel and the system was restarted within 24 hours.
6/3/2021	EW-02 Pipe Leak, EW- 02 Low Flow	Arcadis staff were onsite on 6/3/2021 to clean and replace the EW-02 extraction pump to increase flow at this extraction well.
6/5/2021	T-401 High Level	A T-401 high level alarm was received. This alarm was triggered because the kunkle value that was installed in September 2020 was leaking, which shut down the system and the flow of water to the POTW. Arcadis staff responded to this alarm on 6/14/2021 and 6/17/2021 and changed the orientation of the valve to stop the leak and restart the system.
6/21/2021	P-100/P-200 Drive Fault	A P-100/P-200 drive fault alarm was received and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. This alarm was cleared by on-site personnel and the system was restarted within 24 hours.
6/22/2021	E-Stop	An E-Stop alarm was received and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. This alarm was cleared by on-site personnel and the system was restarted within 24 hours.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	June 2021	
TOTAL VOLUME DISCHARGED	242,129 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accurat	document and all attachments were preparem designed to assure that qualified person sed on my inquiry of the person or persons regathering the information, the information see, and complete. I am aware that there are the possibility of fine and imprisonment for	onnel properly gather and who manage the system, submitted is, to the best of re significant penalties for
Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

August 6, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – July 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of July 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of July 2021. The monthly certification form is included as Attachment A.

For the month of July, the system pumped an estimated 98,631 gallons of wastewater at an estimated average flow rate of 2.21 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 2.21 gallons per minute for the month of July satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of July.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of July and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of July.

An EW-01 pipe leak alarm was received and the system automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. Arcadis staff reset the alarms on July 8, 2021. Arcadis staff were onsite to conduct routine O&M on July 8 and July 9, 2021. The EW-02 vault leak alarm was determined to be triggered due to a faulty sensor at EW-02. The sensor was replaced and the EW-02 vault leak alarm, which was first received on December 12, 2020, was cleared. Arcadis staff also replaced the well vault gaskets to make the lids more watertight. Upon restarting the system after O&M activities, the motor at MW-10D overloaded and failed to start and the system was turned off. A replacement motor and motor lead were ordered and the system continues to remain off until the replacement parts can be installed. The motor lead was a special-order item and is expected to arrive in late August because it was on back-order. The motor and motor lead will be installed at the end of August or early September once the parts are available.

The August 2021 Periodic Compliance Report will be submitted in September 2021. Daily flow and pH

will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

The first semi-annual effluent grab sample for 2021 was collected from the point of discharge at the POTW on April 16, 2021 The effluent grab sample was analyzed for Priority Pollutant volatile organic compounds, semi-volatile organic compounds, metals, and cyanide. Analytical results for the effluent groundwater samples are compared to the effluent limitations specified in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). As summarized in the table below, no exceedances of the effluent limitations were observed. The analytical laboratory report is presented as Attachment B.

Parameter	Effluent Limitations (µg/l)	April 2021 POTW Discharge (μg/l)
Total Arsenic	4,060	13
Total Cadmium	90	ND
Total Chromium	390	13
Total Copper	80	ND
Total Lead	650	3.5 J
Total Nickel	780	20 J
Total Silver	50	ND
Total Zinc	9,300	96
Total Mercury	0.3	ND
Total Cyanide	180	ND

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez Safety Engineer

Enclosure

cc:

Mr. Luis Pizarro, United States Environmental Protection Agency Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for July 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Date Cumulative Total Gallons Extracted (MW-10D)		Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	рН
07/01/21	18,331,696	4,171,167	3,161,794	25,664,657	15,237	
07/02/21	18,341,757	4,172,881	3,165,256	25,679,894	15,191	5.81
07/03/21	18,351,818	4,174,596	3,168,671	25,695,085	15,140	
07/04/21	18,361,881	4,176,311	3,172,033	25,710,225	15,072	
07/05/21	18,371,940	4,178,022	3,175,335	25,725,297	15,000	
07/06/21	18,381,997	4,179,729	3,178,571	25,740,297	14,912	
07/07/21	18,392,052	4,181,435	3,181,722	25,755,209	4,550	
07/08/21	18,395,131	4,181,957	3,182,671	25,759,759	3,218	
07/09/21	18,395,211	4,183,006	3,184,760	25,762,977	184	4.38
07/10/21	18,395,324	4,183,039	3,184,798	25,763,161	0	
07/11/21	18,395,324	4,183,039	3,184,798	25,763,161	0	
07/12/21	18,395,324	4,183,039	3,184,798	25,763,161	0	
07/13/21	18,395,324	4,183,039	3,184,798	25,763,161	127	
07/14/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/15/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/16/21	18,395,419	4,183,051	3,184,818	25,763,288	0	4.07
07/17/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/18/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/19/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/20/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/21/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/22/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/23/21	18,395,419	4,183,051	3,184,818	25,763,288	0	3.92
07/24/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/25/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/26/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/27/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/28/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/29/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
07/30/21	18,395,419	4,183,051	3,184,818	25,763,288	0	5.43
07/31/21	18,395,419	4,183,051	3,184,818	25,763,288	0	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for July 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
7/7/2021	EW-01 Pipe Leak Alarm	An EW-01 pipe leak alarm was received and the system was automatically shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm. The shutdown triggered other alarms (Estop, low pH,drive fault) and required disabling all alarms in order to restart the system. Arcadis staff reset the alarms on 7/8/7021.
7/8/2021	O&M	Arcadis staff onsite for routine O&M. Faulty sensor at EW-02 replaced and extraction well vault gaskets replaced.
7/9/2021	MW-10D Transducer Failure, P-300 Overload Fault	A MW-10D transducer failure alarm was triggered when Arcadis staff attempted to restart the system. The pump motor at MW-10D was determined to be faulty and a replacement motor and motor lead were ordered. The system currently remains shut down until the parts can be replaced.

Attachment A

Attachment A

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	July 2021	
TOTAL VOLUME DISCHARGED	98,631 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accurat	document and all attachments were preparem designed to assure that qualified person sed on my inquiry of the person or persons or gathering the information, the information set, and complete. I am aware that there are the possibility of fine and imprisonment for I	nnel properly gather and who manage the system, ubmitted is, to the best of e significant penalties for
 Date	Authorized Representative	

Attachment B



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-120179-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S. Inc 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Amanda Turner

Authorized for release by:

5/10/2021 2:16:59 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

Have a Question?



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S. Inc Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-120179-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	15
QC Association Summary	26
Chain of Custody	28
Receipt Checklists	32

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Case Narrative

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Job ID: 180-120179-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-120179-1

Receipt

The samples were received on 4/17/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.2° C.

GC/MS VOA

The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following samples were received preserved with hydrochloric acid: POTW OUTFALL (041621) (180-120179-1), TRIP BLANK (180-120179-2) and (180-120179-E-1 DU). The requested target analyte list contains 2-Chloroethyl vinyl ether and Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): TRIP BLANK (180-120179-2).

Due to the concentration of target compounds detected, sample POTW OUTFALL (041621) (180-120179-1) was analyzed at a dilution. Elevated reporting limits (RLs) are provided.

Internal standard (ISTD) response for TBA-d9 for the following sample was outside acceptance criteria: (MB 180-354671/6). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

The laboratory control sample (LCS) for batch 180-354671 recovered outside control limits for the following analytes: Acrolein, 1,1,2,2-Tetrachloroethane, Dibromochloromethane, 1,1,2-Trichloroethane, Methylene Chloride, 1,2-Dichloroethane, Acrylonitrile and Bromoform. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The laboratory control sample (LCS) for batch 180-355217 recovered outside control limits for the following analytes: 1,1,1-Trichloroethane and Carbon tetrachloride. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

The continuing calibration verification (CCV) analyzed in batch 180-354671 was outside the method criteria for the following analyte(s): Acrolein, 1,1,2,2-Tetrachloroethane, Dibromochloromethane, 1,1,2-Trichloroethane, Methylene Chloride, 1,2-Dichloroethane, Acrylonitrile and Bromoform.(LOW). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) associated with batch 180-355217 recovered outside acceptance criteria, low biased, for 1,1,1-Trichloroethane and Carbon tetrachloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

GC/MS Semi VOA

The continuing calibration verification (CCV) associated with batch 180-354322 recovered above the upper control limit for 2,4-Dinitrophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Eurofins TestAmerica, Pittsburgh

5/10/2021

Page 3 of 32

Case Narrative

Client: ARCADIS U.S. Inc

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

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GC	/ IVI	5 1	ľυ	А

Qualifier Description

*- LCS and/or LCSD is outside acceptance limits, low biased.

E Result exceeded calibration range.F3 Duplicate RPD exceeds the control limit

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Accreditation/Certification Summary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21
California	State	2891	04-30-21 *
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-21 *
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21 *
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-21 *
Texas	NELAP	T104704528	03-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-21

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 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Asset ID

 180-120179-1
 POTW OUTFALL (041621)
 Water
 04/16/21 12:50
 04/17/21 10:30

 180-120179-2
 TRIP BLANK
 Water
 04/16/21 00:00
 04/17/21 10:30

Job ID: 180-120179-1

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Method Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Method **Method Description** Protocol Laboratory Volatile Organic Compounds (GC/MS) **EPA 624** TAL PIT EPA **EPA 625** Semivolatile Organic Compounds (GC/MS) 40CFR136A **TAL PIT TAL PIT** EPA 200.7 Rev 4 Metals (ICP) **EPA** EPA 245.1 Rev. Mercury (CVAA) EPA TAL PIT SM 4500CN E Total Cyanide SM TAL PIT 200.7 Preparation, Total Recoverable Metals EPA TAL PIT 245.1 Preparation, Mercury EPA TAL PIT 625 Liquid-Liquid Extraction 40CFR136A TAL PIT

Protocol References:

SM 4500 CN C

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

Cyanide, Distillation

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

- 0

Job ID: 180-120179-1

TAL PIT

SM

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12

Lab Chronicle

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1 Date Collected: 04/16/21 12:50 **Matrix: Water**

Date Received: 04/17/21 10:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP5		1	5 mL	5 mL	354671	04/27/21 19:21	SW1	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 t ID: CHHP5	RADL	200	5 mL	5 mL	355217	04/30/21 19:12	DLF	TAL PIT
Total/NA	Prep	625			1060 mL	10.0 mL	353647	04/19/21 11:23	BJT	TAL PIT
Total/NA	Analysis Instrumen	EPA 625 t ID: CH71		1	1 mL	1 mL	354322	04/23/21 23:52	VVP	TAL PIT
Total Recoverable	Prep	200.7			50 mL	50 mL	355176	04/30/21 08:48	TLP	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 200.7 Rev 4 t ID: C		1			355531	05/03/21 15:47	RJR	TAL PIT
Total/NA	Prep	245.1			25 mL	25 mL	355618	05/05/21 11:43	KHM	TAL PIT
Total/NA	Analysis Instrumen	EPA 245.1 Rev. t ID: HGY		1			355935	05/06/21 10:49	KHM	TAL PIT
Total/NA	Prep	SM 4500 CN C			6 mL	6 mL	354482	04/24/21 18:00	GRB	TAL PIT
Total/NA	Analysis Instrumen	SM 4500CN E t ID: SEAL2		1			354706	04/26/21 20:14	CMR	TAL PIT

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-120179-2 Date Collected: 04/16/21 00:00 **Matrix: Water**

Date Received: 04/17/21 10:30

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	354671	04/27/21 18:28	SW1	TAL PIT
	Instrumer	nt ID: CHHP5								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BJT = Bill Trout

GRB = Gabriel Berghe

KHM = Kyle Mucroski

TLP = Tara Peterson Batch Type: Analysis

CMR = Carl Reagle

DLF = Donald Ferguson

KHM = Kyle Mucroski RJR = Ron Rosenbaum

SW1 = Sunan Wang-un

VVP = Vincent Piccolino

Eurofins TestAmerica, Pittsburgh

5/10/2021

Page 9 of 32

Job ID: 180-120179-1

Client: ARCADIS U.S. Inc Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Date Collected: 04/16/21 12:50 Date Received: 04/17/21 10:30

Lab Sample ID: 180-120179-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 19:21	1
1,1,2,2-Tetrachloroethane	ND	*-	1.0	0.60	ug/L			04/27/21 19:21	1
1,1,2-Trichloroethane	6.1	*_	1.0	0.45	ug/L			04/27/21 19:21	1
1,1-Dichloroethane	1.4		1.0	0.31	ug/L			04/27/21 19:21	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 19:21	1
1,2-Dichloroethane	1300	E *-	1.0	0.57	ug/L			04/27/21 19:21	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 19:21	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 19:21	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 19:21	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 19:21	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 19:21	1
Acrolein	ND	*_	20	16	ug/L			04/27/21 19:21	1
Acrylonitrile	ND	*_	20	7.8	ug/L			04/27/21 19:21	1
Benzene	ND		1.0	0.60	ug/L			04/27/21 19:21	1
Bromoform	ND	*_	1.0	0.98	ug/L			04/27/21 19:21	1
Bromomethane	ND		1.0	0.89	ug/L			04/27/21 19:21	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 19:21	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 19:21	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 19:21	1
Chloroform	ND		1.0	0.60	ug/L			04/27/21 19:21	1
Chloromethane	ND		1.0	0.90	ug/L			04/27/21 19:21	1
cis-1,2-Dichloroethene	8.7		1.0	0.71	ug/L			04/27/21 19:21	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 19:21	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 19:21	1
Methylene Chloride	2200	E *-	1.0	0.89	ug/L			04/27/21 19:21	1
Tetrachloroethene	0.62	J	1.0	0.47	ug/L			04/27/21 19:21	1
Toluene	0.65	J	1.0	0.46	ug/L			04/27/21 19:21	1
trans-1,2-Dichloroethene	2.2		1.0	0.67	ug/L			04/27/21 19:21	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 19:21	1
Trichloroethene	4.3		1.0	0.69	ug/L			04/27/21 19:21	1
Vinyl chloride	40		1.0	0.40	ug/L			04/27/21 19:21	1
Dibromochloromethane	ND	*_	1.0	0.84	ug/L			04/27/21 19:21	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 19:21	1
Surrogato	%Pocovory	0	Limite				Propared	Analyzod	Dil Eac

١	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	51		42 - 142		04/27/21 19:21	1
	4-Bromofluorobenzene (Surr)	81		54 - 114		04/27/21 19:21	1
	Toluene-d8 (Surr)	98		61 - 125		04/27/21 19:21	1
	Dibromofluoromethane (Surr)	77		60 - 150		04/27/21 19:21	1

Method: EPA 624 - Volatile	Organic (Compounds ((GC/MS)	- RADL
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Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND *-	200	120	ug/L			04/30/21 19:12	200
1,1,2,2-Tetrachloroethane	ND	200	120	ug/L			04/30/21 19:12	200
1,1,2-Trichloroethane	ND	200	91	ug/L			04/30/21 19:12	200
1,1-Dichloroethane	ND	200	61	ug/L			04/30/21 19:12	200
1,1-Dichloroethene	ND	200	110	ug/L			04/30/21 19:12	200
1,2-Dichloroethane	4700	200	110	ug/L			04/30/21 19:12	200
1,2-Dichloropropane	ND	200	130	ug/L			04/30/21 19:12	200
1,2-Dichlorobenzene	ND	200	73	ug/L			04/30/21 19:12	200

Eurofins TestAmerica, Pittsburgh

Page 10 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Dibromofluoromethane (Surr)

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1 Date Collected: 04/16/21 12:50

Matrix: Water Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		200	100	ug/L			04/30/21 19:12	200
1,4-Dichlorobenzene	ND		200	110	ug/L			04/30/21 19:12	200
2-Chloroethyl vinyl ether	ND		400	340	ug/L			04/30/21 19:12	200
Acrolein	ND		4000	3200	ug/L			04/30/21 19:12	200
Acrylonitrile	ND		4000	1600	ug/L			04/30/21 19:12	200
Benzene	ND		200	120	ug/L			04/30/21 19:12	200
Bromoform	ND		200	200	ug/L			04/30/21 19:12	200
Bromomethane	ND		200	180	ug/L			04/30/21 19:12	200
Carbon disulfide	ND		200	180	ug/L			04/30/21 19:12	200
Carbon tetrachloride	ND	*_	200	180	ug/L			04/30/21 19:12	200
Chlorobenzene	ND		200	100	ug/L			04/30/21 19:12	200
Chloroform	ND		200	120	ug/L			04/30/21 19:12	200
Chloromethane	ND		200	180	ug/L			04/30/21 19:12	200
cis-1,2-Dichloroethene	ND		200	140	ug/L			04/30/21 19:12	200
cis-1,3-Dichloropropene	ND		200	120	ug/L			04/30/21 19:12	200
Ethylbenzene	ND		200	100	ug/L			04/30/21 19:12	200
Methylene Chloride	5900		200	180	ug/L			04/30/21 19:12	200
Tetrachloroethene	ND		200	93	ug/L			04/30/21 19:12	200
Toluene	ND		200	91	ug/L			04/30/21 19:12	200
trans-1,2-Dichloroethene	ND		200	130	ug/L			04/30/21 19:12	200
trans-1,3-Dichloropropene	ND		200	120	ug/L			04/30/21 19:12	200
Trichloroethene	ND		200	140	ug/L			04/30/21 19:12	200
Vinyl chloride	ND		200	80	ug/L			04/30/21 19:12	200
Dibromochloromethane	ND		200	170	ug/L			04/30/21 19:12	200
Dichlorobromomethane	ND		200	130	ug/L			04/30/21 19:12	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		42 - 142					04/30/21 19:12	200
4-Bromofluorobenzene (Surr)	83		54 - 114					04/30/21 19:12	200
Toluene-d8 (Surr)	81		61 - 125					04/30/21 19:12	200
5" " " " " " " " " " " " " " " " " " "								04/00/04 40 40	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.8	0.61	ug/L		04/19/21 11:23	04/23/21 23:52	1
Acenaphthylene	ND		1.8	0.61	ug/L		04/19/21 11:23	04/23/21 23:52	1
Anthracene	ND		1.8	0.46	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzidine	ND	F1	190	86	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[a]anthracene	ND		1.8	0.71	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[a]pyrene	ND		1.8	0.50	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[b]fluoranthene	ND		1.8	0.92	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[g,h,i]perylene	ND		1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Benzo[k]fluoranthene	ND		1.8	0.83	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-chloroethoxy)methane	ND		9.4	0.63	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-chloroethyl)ether	ND		1.8	0.38	ug/L		04/19/21 11:23	04/23/21 23:52	1
Bis(2-ethylhexyl) phthalate	ND		94	59	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Bromophenyl phenyl ether	ND		9.4	0.59	ug/L		04/19/21 11:23	04/23/21 23:52	1
Butyl benzyl phthalate	ND		9.4	4.4	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Chloro-3-methylphenol	ND		9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
2-Chloronaphthalene	ND		1.8	0.56	ug/L		04/19/21 11:23	04/23/21 23:52	1

60 - 150

92

Eurofins TestAmerica, Pittsburgh

04/30/21 19:12

Page 11 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Lab Sample ID: 180-120179-1

Date Collected: 04/16/21 12:50 Matrix: Water Date Received: 04/17/21 10:30

Analyte	Result Qualit	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	ND ND	9.4	0.60	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Chlorophenyl phenyl ether	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
Chrysene	ND	1.8	0.76	ug/L		04/19/21 11:23	04/23/21 23:52	1
Dibenzo(a,h)-anthracene	ND	1.8	0.68	ug/L		04/19/21 11:23	04/23/21 23:52	1
3,3'-Dichlorobenzidine	ND	9.4	5.5	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dichlorophenol	ND	1.8	0.48	ug/L		04/19/21 11:23	04/23/21 23:52	1
Diethyl phthalate	ND	9.4	5.3	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dimethylphenol	ND	9.4	0.39	ug/L		04/19/21 11:23	04/23/21 23:52	1
Dimethyl phthalate	ND	9.4	0.53	ug/L		04/19/21 11:23	04/23/21 23:52	1
Di-n-butyl phthalate	ND	9.4	7.0	ug/L		04/19/21 11:23	04/23/21 23:52	1
4,6-Dinitro-2-methylphenol	ND	47	14	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dinitrophenol	ND	94	14	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4-Dinitrotoluene	ND	9.4	0.48	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,6-Dinitrotoluene	ND	9.4	0.57	ug/L		04/19/21 11:23	04/23/21 23:52	1
Di-n-octyl phthalate	ND	9.4	6.5	ug/L		04/19/21 11:23	04/23/21 23:52	1
1,2-Diphenylhydrazine(as Azobenzene)	ND	9.4	0.46	ug/L		04/19/21 11:23	04/23/21 23:52	1
Fluoranthene	ND	1.8	0.57	ug/L		04/19/21 11:23	04/23/21 23:52	1
Fluorene	ND	1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorobenzene	ND	1.8	0.53	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorobutadiene	ND	1.8	0.65	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachlorocyclopentadiene	ND	9.4	4.7	ug/L		04/19/21 11:23	04/23/21 23:52	1
Hexachloroethane	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
Indeno[1,2,3-cd]pyrene	ND	1.8	0.80	ug/L		04/19/21 11:23	04/23/21 23:52	1
Isophorone	ND	9.4	0.51	ug/L		04/19/21 11:23	04/23/21 23:52	1
Naphthalene	ND	1.8	0.56	ug/L		04/19/21 11:23	04/23/21 23:52	1
Nitrobenzene	ND	19	4.7	ug/L		04/19/21 11:23	04/23/21 23:52	1
2-Nitrophenol	ND	9.4	0.58	ug/L		04/19/21 11:23	04/23/21 23:52	1
4-Nitrophenol	ND	47	1.3	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodimethylamine	ND	9.4	0.63	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodi-n-propylamine	ND	1.8	0.67	ug/L		04/19/21 11:23	04/23/21 23:52	1
N-Nitrosodiphenylamine	ND	9.4	1.1	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,2'-oxybis[1-chloropropane]	ND	1.8	0.55	ug/L		04/19/21 11:23	04/23/21 23:52	1
Pentachlorophenol	ND	47	8.0	ug/L		04/19/21 11:23	04/23/21 23:52	1
Phenanthrene	ND	1.8	0.52	ug/L		04/19/21 11:23	04/23/21 23:52	1
Phenol	ND	9.4	4.6	ug/L		04/19/21 11:23	04/23/21 23:52	1
Pyrene	ND	1.8	0.51	ug/L		04/19/21 11:23	04/23/21 23:52	1
1,2,4-Trichlorobenzene	ND	9.4	0.49	ug/L		04/19/21 11:23	04/23/21 23:52	1
2,4,6-Trichlorophenol	ND	9.4	0.64	ug/L		04/19/21 11:23	04/23/21 23:52	1
Surrogate	%Recovery Qualit	fier Limits				Prepared	Analyzed	Dil Fac
2 Fluorobinhamul						04/10/21 11:22	04/22/21 22:52	

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	66		50 - 105	04/19/21 11:23	04/23/21 23:52	1
2-Fluorophenol	66		42 - 106	04/19/21 11:23	04/23/21 23:52	1
Nitrobenzene-d5	60		53 - 105	04/19/21 11:23	04/23/21 23:52	1
Phenol-d5	59		43 - 105	04/19/21 11:23	04/23/21 23:52	1
Terphenyl-d14	74		31 - 111	04/19/21 11:23	04/23/21 23:52	1
2 4 6-Tribromonhenol	46		29 - 122	04/19/21 11:23	04/23/21 23:52	1

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL (041621)

Date Collected: 04/16/21 12:50

Date Received: 04/17/21 10:30

Lab Sample ID: 180-120179-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		5.0	0.83	ug/L		04/30/21 08:48	05/03/21 15:47	1
Arsenic	13		10	6.4	ug/L		04/30/21 08:48	05/03/21 15:47	1
Cadmium	ND		5.0	0.30	ug/L		04/30/21 08:48	05/03/21 15:47	1
Chromium	13		5.0	0.71	ug/L		04/30/21 08:48	05/03/21 15:47	1
Copper	ND		25	4.1	ug/L		04/30/21 08:48	05/03/21 15:47	1
Lead	3.5	J	10	2.8	ug/L		04/30/21 08:48	05/03/21 15:47	1
Nickel	20	J	40	1.6	ug/L		04/30/21 08:48	05/03/21 15:47	1
Zinc	96		20	19	ug/L		04/30/21 08:48	05/03/21 15:47	1

Method: EPA 245.1 Rev. - Mercury (CVAA)

Analyte RL Analyzed Result Qualifier MDL Unit **Prepared** Dil Fac 05/05/21 11:43 05/06/21 10:49 Mercury ND 0.20 0.13 ug/L

General Chemistry

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Cyanide, Total ND 0.010 0.0080 mg/L 04/24/21 18:00 04/26/21 20:14

Lab Sample ID: 180-120179-2 Client Sample ID: TRIP BLANK **Matrix: Water**

Date Collected: 04/16/21 00:00 Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 18:28	1
1,1,2,2-Tetrachloroethane	ND	*-	1.0	0.60	ug/L			04/27/21 18:28	1
1,1,2-Trichloroethane	ND	*-	1.0	0.45	ug/L			04/27/21 18:28	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/27/21 18:28	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 18:28	1
1,2-Dichloroethane	ND	*-	1.0	0.57	ug/L			04/27/21 18:28	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 18:28	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 18:28	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 18:28	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 18:28	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 18:28	1
Acrolein	ND	*-	20	16	ug/L			04/27/21 18:28	1
Acrylonitrile	ND	*_	20	7.8	ug/L			04/27/21 18:28	1
Benzene	ND		1.0	0.60	ug/L			04/27/21 18:28	1
Bromoform	ND	*-	1.0	0.98	ug/L			04/27/21 18:28	1
Bromomethane	ND		1.0	0.89	ug/L			04/27/21 18:28	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 18:28	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 18:28	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 18:28	1
Chloroform	ND		1.0	0.60	ug/L			04/27/21 18:28	1
Chloromethane	ND		1.0	0.90	ug/L			04/27/21 18:28	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/27/21 18:28	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 18:28	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 18:28	1
Methylene Chloride	ND	*_	1.0	0.89	ug/L			04/27/21 18:28	1
Tetrachloroethene	ND		1.0	0.47	ug/L			04/27/21 18:28	1
Toluene	ND		1.0		ug/L			04/27/21 18:28	1

Eurofins TestAmerica, Pittsburgh

Page 13 of 32

Client Sample Results

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-120179-2

Date Collected: 04/16/21 00:00 **Matrix: Water** Date Received: 04/17/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/27/21 18:28	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 18:28	1
Trichloroethene	ND		1.0	0.69	ug/L			04/27/21 18:28	1
Vinyl chloride	ND		1.0	0.40	ug/L			04/27/21 18:28	1
Dibromochloromethane	ND	*_	1.0	0.84	ug/L			04/27/21 18:28	1
Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	59		42 - 142					04/27/21 18:28	1
4-Bromofluorobenzene (Surr)	78		54 - 114					04/27/21 18:28	1
Toluene-d8 (Surr)	91		61 - 125					04/27/21 18:28	1
Dibromofluoromethane (Surr)	84		60 - 150					04/27/21 18:28	1

Client: ARCADIS U.S. Inc

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-354671/6

Matrix: Water

Analysis Batch: 354671

Client Sample ID: Method Blank

Prep Type: Total/NA

1,1,1-Trichloroethane ND 1,0 0.60 ug/L 04/27/21 10:48 1,1,2,2-Teitachloroethane ND 1,0 0.60 ug/L 04/27/21 10:48 1,1,2-Trichloroethane ND 1,0 0.45 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1,0 0.55 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1,0 0.55 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.66 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.50 ug/L 04/27/21 10:48 1,2-Dichloropethane ND 1,0 0.50 ug/L 04/27/21 10:48 Accolorin ND 1,0 0.50 ug/L	, , , , , , , , , , , , , , , , , , , ,	MB	MB							
1,1,2,2-Tetrachloroethane ND 1.0 0.60 ug/L 04/27/21 10.48 1,1,2-Tirchloroethane ND 1.0 0.45 ug/L 04/27/21 10.48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10.48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10.48 1,2-Dichloroperbane ND 1.0 0.66 ug/L 04/27/21 10.48 1,2-Dichlorobenzene ND 1.0 0.66 ug/L 04/27/21 10.48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 4,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10.48 Acrolein ND 1.0 0.60 ug/L 04/	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane ND 1.0 0.45 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1.0 0.31 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.56 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.36 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 2.0 1.7 ug/L 04/27/21 10:48 Berzene ND 1.0 0.60 ug/L 04/27/21 10:48 <td>1,1,1-Trichloroethane</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.60</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/27/21 10:48	1
1,1-Dichloroethane ND 1.0 0.31 ug/L 04/27/21 10:48 1,1-Dichloroethane ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.56 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.56 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 1.0 0.8 ug/L	1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			04/27/21 10:48	1
1,1-Dichloroethene ND 1.0 0.55 ug/L 04/27/21 10:48 1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropenae ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 1.6 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Berzene ND 1.0 0.89 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Car	1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			04/27/21 10:48	1
1,2-Dichloroethane ND 1.0 0.57 ug/L 04/27/21 10:48 1,2-Dichloropropane ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 2.0 1.6 ug/L 04/27/21 10:48 Acrolein ND 2.0 7.8 ug/L 04/27/21 10:48 Acrolein ND 1.0 0.60 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48	1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/27/21 10:48	1
1,2-Dichloropropane ND 1.0 0.66 ug/L 04/27/21 10:48 1,2-Dichlorobenzene ND 1.0 0.36 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrolonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoftane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 <	1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/27/21 10:48	1
1,2-Dichlorobenzene ND 1.0 0.36 ug/L 04/27/21 10:48 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Acrolein ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.89 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.50 ug/L 04/27/21 10:48 Chlorobenzen	1,2-Dichloroethane	ND		1.0	0.57	ug/L			04/27/21 10:48	1
1,3-Dichlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoformethane ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoformethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chlor	1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/27/21 10:48	1
1,4-Dichlorobenzene ND 1.0 0.54 ug/L 04/27/21 10:48 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrolonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroptopene ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloro	1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/27/21 10:48	1
2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 04/27/21 10:48 Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.88 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chlorodethene ND 1.0 0.50 ug/L 04/27/21 10:48 Ethylbenzene	1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/27/21 10:48	1
Acrolein ND 20 16 ug/L 04/27/21 10:48 Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloropthene ND 1.0 0.91 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.59 ug/L 04/27/21 10:48 Ettrachloroethene	1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/27/21 10:48	1
Acrylonitrile ND 20 7.8 ug/L 04/27/21 10:48 Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.88 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloroethene ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0	2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/27/21 10:48	1
Benzene ND 1.0 0.60 ug/L 04/27/21 10:48 Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.50 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.51 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.89 ug/L 04/27/21 10:48 Tetra	Acrolein	ND		20	16	ug/L			04/27/21 10:48	1
Bromoform ND 1.0 0.98 ug/L 04/27/21 10:48 Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Toluene ND 1.0 0.47 ug/L 04/27/21 10:48	Acrylonitrile	ND		20	7.8	ug/L			04/27/21 10:48	1
Bromomethane ND 1.0 0.89 ug/L 04/27/21 10:48 Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 Cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene	Benzene	ND		1.0	0.60	ug/L			04/27/21 10:48	1
Carbon disulfide ND 1.0 0.88 ug/L 04/27/21 10:48 Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene	Bromoform	ND		1.0	0.98	ug/L			04/27/21 10:48	1
Carbon tetrachloride ND 1.0 0.88 ug/L 04/27/21 10:48 Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48	Bromomethane	ND		1.0	0.89	ug/L			04/27/21 10:48	1
Chlorobenzene ND 1.0 0.50 ug/L 04/27/21 10:48 Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.58 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane	Carbon disulfide	ND		1.0	0.88	ug/L			04/27/21 10:48	1
Chloroform ND 1.0 0.60 ug/L 04/27/21 10:48 Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 </td <td>Carbon tetrachloride</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.88</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	Carbon tetrachloride	ND		1.0	0.88	ug/L			04/27/21 10:48	1
Chloromethane ND 1.0 0.90 ug/L 04/27/21 10:48 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.40 ug/L 04/27/21 10:48 </td <td>Chlorobenzene</td> <td>ND</td> <td></td> <td>1.0</td> <td>0.50</td> <td>ug/L</td> <td></td> <td></td> <td>04/27/21 10:48</td> <td>1</td>	Chlorobenzene	ND		1.0	0.50	ug/L			04/27/21 10:48	1
cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 04/27/21 10:48 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Chloroform	ND		1.0	0.60	ug/L			04/27/21 10:48	1
cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 04/27/21 10:48 Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Chloromethane	ND		1.0	0.90	ug/L			04/27/21 10:48	1
Ethylbenzene ND 1.0 0.51 ug/L 04/27/21 10:48 Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/27/21 10:48	1
Methylene Chloride ND 1.0 0.89 ug/L 04/27/21 10:48 Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/27/21 10:48	1
Tetrachloroethene ND 1.0 0.47 ug/L 04/27/21 10:48 Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Ethylbenzene	ND		1.0	0.51	ug/L			04/27/21 10:48	1
Toluene ND 1.0 0.46 ug/L 04/27/21 10:48 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Methylene Chloride	ND		1.0	0.89	ug/L			04/27/21 10:48	1
trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 04/27/21 10:48 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Tetrachloroethene	ND		1.0	0.47	ug/L			04/27/21 10:48	1
trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 04/27/21 10:48 Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Toluene	ND		1.0	0.46	ug/L			04/27/21 10:48	1
Trichloroethene ND 1.0 0.69 ug/L 04/27/21 10:48 Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/27/21 10:48	1
Vinyl chloride ND 1.0 0.40 ug/L 04/27/21 10:48 Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/27/21 10:48	1
Dibromochloromethane ND 1.0 0.84 ug/L 04/27/21 10:48	Trichloroethene	ND		1.0	0.69	ug/L			04/27/21 10:48	1
	Vinyl chloride	ND		1.0	0.40	ug/L			04/27/21 10:48	1
Dichlorobromomethane ND 1.0 0.64 ug/L 04/27/21 10:48	Dibromochloromethane	ND		1.0	0.84	ug/L			04/27/21 10:48	1
	Dichlorobromomethane	ND		1.0	0.64	ug/L			04/27/21 10:48	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	46		42 - 142		04/27/21 10:48	1
4-Bromofluorobenzene (Surr)	89		54 - 114		04/27/21 10:48	1
Toluene-d8 (Surr)	114		61 - 125		04/27/21 10:48	1
Dibromofluoromethane (Surr)	77		60 - 150		04/27/21 10:48	1

Lab Sample ID: LCS 180-354671/1004

Matrix: Water

Analysis Batch: 354671

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	9.05		ug/L		91	75 - 125	
1,1,2,2-Tetrachloroethane	10.0	4.67	*-	ug/L		47	60 - 140	
1,1,2-Trichloroethane	10.0	5.89	*-	ug/L		59	71 - 129	

Eurofins TestAmerica, Pittsburgh

Prep Type: Total/NA

5/10/2021

Client Sample ID: Lab Control Sample

Page 15 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-354671/1004

Matrix: Water

Analysis Batch: 354671

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethane	10.0	8.65		ug/L		86	73 - 127	
1,1-Dichloroethene	10.0	7.34		ug/L		73	50 - 150	
1,2-Dichloroethane	10.0	6.10	*_	ug/L		61	70 - 130	
1,2-Dichloropropane	10.0	8.65		ug/L		87	35 - 150	
1,2-Dichlorobenzene	10.0	8.64		ug/L		86	65 - 135	
1,3-Dichlorobenzene	10.0	9.57		ug/L		96	73 - 127	
1,4-Dichlorobenzene	10.0	9.40		ug/L		94	65 - 135	
2-Chloroethyl vinyl ether	20.0	10.3		ug/L		52	10 - 150	
Acrolein	30.0	ND	*_	ug/L		26	60 - 140	
Acrylonitrile	100	30.5	*_	ug/L		31	60 - 140	
Benzene	10.0	9.15		ug/L		91	65 - 135	
Bromoform	10.0	5.40	*_	ug/L		54	71 - 129	
Bromomethane	10.0	8.80		ug/L		88	15 - 150	
Carbon disulfide	10.0	8.25		ug/L		83	44 - 150	
Carbon tetrachloride	10.0	8.36		ug/L		84	73 - 127	
Chlorobenzene	10.0	9.72		ug/L		97	66 - 134	
Chloroform	10.0	8.48		ug/L		85	70 - 135	
Chloromethane	10.0	9.63		ug/L		96	10 - 150	
cis-1,2-Dichloroethene	10.0	8.25		ug/L		83	39 - 150	
cis-1,3-Dichloropropene	10.0	9.63		ug/L		96	25 - 150	
Ethylbenzene	10.0	11.7		ug/L		117	60 - 140	
Methylene Chloride	10.0	5.60	*_	ug/L		56	60 - 140	

10.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

9.32

10.2

8.17

8.02

9.54

8.82

8.01

6.38 *-

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	63		42 - 142
4-Bromofluorobenzene (Surr)	101		54 - 114
Toluene-d8 (Surr)	98		61 - 125
Dibromofluoromethane (Surr)	83		60 - 150

Lab Sample ID: 180-120179-1 DU

Matrix: Water

Tetrachloroethene

Trichloroethene

Vinyl chloride

trans-1,2-Dichloroethene

Dibromochloromethane

Dichlorobromomethane

trans-1,3-Dichloropropene

Toluene

Analysis Batch: 354671

Client Sample ID:	POTW OUTFALL	(041621)
	Pron Type:	Total/NA

74 - 126

75 - 125

70 - 130

50 - 150

67 - 133

10 - 150

70 - 135

65 - 135

93

102

82

80

95

88

64

80

Prep Type: Total/NA

	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
1,1,1-Trichloroethane	ND		ND		ug/L		NC	19
1,1,2,2-Tetrachloroethane	ND	*_	ND	*_	ug/L		NC	34
1,1,2-Trichloroethane	6.1	*_	7.79	*- F3	ug/L		24	20
1,1-Dichloroethane	1.4		1.54		ug/L		13	19
1,1-Dichloroethene	ND		ND		ug/L		NC	25
1,2-Dichloroethane	1300	E *-	1700	E *-	ug/L		24	24

Eurofins TestAmerica, Pittsburgh

Page 16 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-120179-1 DU

Matrix: Water

Analysis Batch: 354671

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA

-	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
1,2-Dichloropropane	ND		ND		ug/L		NC	21
1,2-Dichlorobenzene	ND		ND		ug/L		NC	16
1,3-Dichlorobenzene	ND		ND		ug/L		NC	16
1,4-Dichlorobenzene	ND		ND		ug/L		NC	15
2-Chloroethyl vinyl ether	ND		1.95	J	ug/L		NC	35
Acrolein	ND	*_	ND	*-	ug/L		NC	34
Acrylonitrile	ND	*_	ND	*_	ug/L		NC	28
Benzene	ND		ND		ug/L		NC	18
Bromoform	ND	*_	ND	*-	ug/L		NC	23
Bromomethane	ND		ND		ug/L		NC	27
Carbon disulfide	ND		ND		ug/L		NC	18
Carbon tetrachloride	ND		ND		ug/L		NC	23
Chlorobenzene	ND		ND		ug/L		NC	17
Chloroform	ND		ND		ug/L		NC	22
Chloromethane	ND		ND		ug/L		NC	24
cis-1,2-Dichloroethene	8.7		10.1		ug/L		15	19
cis-1,3-Dichloropropene	ND		ND		ug/L		NC	28
Ethylbenzene	ND		ND		ug/L		NC	17
Methylene Chloride	2200	E *-	2700	E *-	ug/L		20	23
Tetrachloroethene	0.62	J	0.645	J	ug/L		4	23
Toluene	0.65	J	0.710	J	ug/L		8	16
trans-1,2-Dichloroethene	2.2		2.48		ug/L		11	17
trans-1,3-Dichloropropene	ND		ND		ug/L		NC	27
Trichloroethene	4.3		4.80		ug/L		11	18
Vinyl chloride	40		42.3		ug/L		5	26
Dibromochloromethane	ND	*_	ND	*_	ug/L		NC	20
Dichlorobromomethane	ND		ND		ug/L		NC	23

DU DU

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	50		42 - 142
4-Bromofluorobenzene (Surr)	81		54 - 114
Toluene-d8 (Surr)	95		61 - 125
Dibromofluoromethane (Surr)	76		60 - 150

Lab Sample ID: MB 180-355217/6

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Method Blank Prep Type: Total/NA

	MB	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			04/30/21 13:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			04/30/21 13:23	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			04/30/21 13:23	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			04/30/21 13:23	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			04/30/21 13:23	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			04/30/21 13:23	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			04/30/21 13:23	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			04/30/21 13:23	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			04/30/21 13:23	1
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Eurofins TestAmerica, Pittsburgh

Page 17 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

MB MB

Lab Sample ID: MB 180-355217/6

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Method Blank

Prep Type: Total/NA

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			04/30/21 13:23	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			04/30/21 13:23	1
Acrolein	ND		20	16	ug/L			04/30/21 13:23	1
Acrylonitrile	ND		20	7.8	ug/L			04/30/21 13:23	1
Benzene	ND		1.0	0.60	ug/L			04/30/21 13:23	1
Bromoform	ND		1.0	0.98	ug/L			04/30/21 13:23	1
Bromomethane	ND		1.0	0.89	ug/L			04/30/21 13:23	1
Carbon disulfide	ND		1.0	0.88	ug/L			04/30/21 13:23	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			04/30/21 13:23	1
Chlorobenzene	ND		1.0	0.50	ug/L			04/30/21 13:23	1
Chloroform	ND		1.0	0.60	ug/L			04/30/21 13:23	1
Chloromethane	ND		1.0	0.90	ug/L			04/30/21 13:23	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			04/30/21 13:23	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			04/30/21 13:23	1
Ethylbenzene	ND		1.0	0.51	ug/L			04/30/21 13:23	1
Methylene Chloride	ND		1.0	0.89	ug/L			04/30/21 13:23	1
Tetrachloroethene	ND		1.0	0.47	ug/L			04/30/21 13:23	1
Toluene	ND		1.0	0.46	ug/L			04/30/21 13:23	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			04/30/21 13:23	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			04/30/21 13:23	1
Trichloroethene	ND		1.0	0.69	ug/L			04/30/21 13:23	1
Vinyl chloride	ND		1.0	0.40	ug/L			04/30/21 13:23	1
Dibromochloromethane	ND		1.0	0.84	ug/L			04/30/21 13:23	1
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ИΒ	ΜВ

ND

Surrogate	%Recovery	Qualifier	Limits	Prepa	red An	alyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	89		42 - 142		04/30	/21 13:23	1	
4-Bromofluorobenzene (Surr)	86		54 - 114		04/30	/21 13:23	1	
Toluene-d8 (Surr)	82		61 - 125		04/30	/21 13:23	1	
Dibromofluoromethane (Surr)	94		60 - 150		04/30	/21 13:23	1	

1.0

0.64 ug/L

Lab Sample ID: LCS 180-355217/1002

Matrix: Water

Dichlorobromomethane

Analysis Batch: 355217

Client Sample ID: Lab Control Sample Prep Type: Total/NA

04/30/21 13:23

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	7.01	*_	ug/L		70	75 - 125
1,1,2,2-Tetrachloroethane	10.0	10.6		ug/L		106	60 - 140
1,1,2-Trichloroethane	10.0	8.21		ug/L		82	71 - 129
1,1-Dichloroethane	10.0	8.16		ug/L		82	73 - 127
1,1-Dichloroethene	10.0	8.46		ug/L		85	50 - 150
1,2-Dichloroethane	10.0	8.62		ug/L		86	70 - 130
1,2-Dichloropropane	10.0	8.90		ug/L		89	35 - 150
1,2-Dichlorobenzene	10.0	9.24		ug/L		92	65 - 135
1,3-Dichlorobenzene	10.0	8.85		ug/L		89	73 - 127
1,4-Dichlorobenzene	10.0	9.00		ug/L		90	65 - 135
2-Chloroethyl vinyl ether	20.0	19.6		ug/L		98	10 - 150
Acrolein	30.0	25.0		ug/L		83	60 - 140

Eurofins TestAmerica, Pittsburgh

Page 18 of 32

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-355217/1002

Matrix: Water

Analysis Batch: 355217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

7 maryolo Batom 000211	Spike	LCS	LCS				%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Acrylonitrile		84.5		ug/L		84	60 - 140
Benzene	10.0	8.89		ug/L		89	65 - 135
Bromoform	10.0	10.7		ug/L		107	71 - 129
Bromomethane	10.0	7.98		ug/L		80	15 - 150
Carbon disulfide	10.0	6.93		ug/L		69	44 - 150
Carbon tetrachloride	10.0	6.28	*_	ug/L		63	73 - 127
Chlorobenzene	10.0	9.35		ug/L		93	66 - 134
Chloroform	10.0	8.71		ug/L		87	70 - 135
Chloromethane	10.0	12.4		ug/L		124	10 - 150
cis-1,2-Dichloroethene	10.0	8.57		ug/L		86	39 - 150
cis-1,3-Dichloropropene	10.0	11.4		ug/L		114	25 - 150
Ethylbenzene	10.0	10.5		ug/L		105	60 - 140
Methylene Chloride	10.0	7.73		ug/L		77	60 - 140
Tetrachloroethene	10.0	8.45		ug/L		85	74 - 126
Toluene	10.0	8.80		ug/L		88	75 - 125
trans-1,2-Dichloroethene	10.0	8.10		ug/L		81	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150
Trichloroethene	10.0	9.07		ug/L		91	67 - 133
Vinyl chloride	10.0	10.9		ug/L		109	10 - 150
Dibromochloromethane	10.0	8.60		ug/L		86	70 - 135
Dichlorobromomethane	10.0	8.83		ug/L		88	65 - 135

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		42 - 142
4-Bromofluorobenzene (Surr)	99		54 - 114
Toluene-d8 (Surr)	87		61 - 125
Dibromofluoromethane (Surr)	82		60 - 150

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 353647

_	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.9	0.65	ug/L		04/19/21 11:23	04/23/21 23:26	1
Acenaphthylene	ND		1.9	0.65	ug/L		04/19/21 11:23	04/23/21 23:26	1
Anthracene	ND		1.9	0.49	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzidine	ND		200	91	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[a]anthracene	ND		1.9	0.75	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[a]pyrene	ND		1.9	0.53	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[b]fluoranthene	ND		1.9	0.97	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[g,h,i]perylene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Benzo[k]fluoranthene	ND		1.9	0.88	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-chloroethoxy)methane	ND		10	0.67	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-chloroethyl)ether	ND		1.9	0.40	ug/L		04/19/21 11:23	04/23/21 23:26	1
Bis(2-ethylhexyl) phthalate	ND		100	62	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Bromophenyl phenyl ether	ND		10	0.63	ug/L		04/19/21 11:23	04/23/21 23:26	1
Butyl benzyl phthalate	ND		10	4.6	ug/L		04/19/21 11:23	04/23/21 23:26	1

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Page 19 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Surrogate

Terphenyl-d14

Analysis Batch: 354322

Client Sample ID: Method Blank

Prep Type: Total/NA **Prep Batch: 353647**

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Chloronaphthalene	ND		1.9	0.59	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Chlorophenol	ND		10	0.64	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Chlorophenyl phenyl ether	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
Chrysene	ND		1.9	0.81	ug/L		04/19/21 11:23	04/23/21 23:26	1
Dibenzo(a,h)-anthracene	ND		1.9	0.72	ug/L		04/19/21 11:23	04/23/21 23:26	1
3,3'-Dichlorobenzidine	ND		10	5.8	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dichlorophenol	ND		1.9	0.51	ug/L		04/19/21 11:23	04/23/21 23:26	1
Diethyl phthalate	ND		10	5.7	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dimethylphenol	ND		10	0.41	ug/L		04/19/21 11:23	04/23/21 23:26	1
Dimethyl phthalate	ND		10	0.56	ug/L		04/19/21 11:23	04/23/21 23:26	1
Di-n-butyl phthalate	ND		10	7.4	ug/L		04/19/21 11:23	04/23/21 23:26	1
4,6-Dinitro-2-methylphenol	ND		50	15	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dinitrophenol	ND		100	15	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,4-Dinitrotoluene	ND		10	0.51	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,6-Dinitrotoluene	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
Di-n-octyl phthalate	ND		10	6.9	ug/L		04/19/21 11:23	04/23/21 23:26	1
1,2-Diphenylhydrazine(as	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
Azobenzene)					Ü				
Fluoranthene	ND		1.9	0.60	ug/L		04/19/21 11:23	04/23/21 23:26	1
Fluorene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorobenzene	ND		1.9	0.56	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorobutadiene	ND		1.9	0.69	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachlorocyclopentadiene	ND		10	5.0	ug/L		04/19/21 11:23	04/23/21 23:26	1
Hexachloroethane	ND		10	0.62	ug/L		04/19/21 11:23	04/23/21 23:26	1
Indeno[1,2,3-cd]pyrene	ND		1.9	0.85	ug/L		04/19/21 11:23	04/23/21 23:26	1
Isophorone	ND		10	0.54	ug/L		04/19/21 11:23	04/23/21 23:26	1
Naphthalene	ND		1.9	0.59	ug/L		04/19/21 11:23	04/23/21 23:26	1
Nitrobenzene	ND		20	5.0	ug/L		04/19/21 11:23	04/23/21 23:26	1
2-Nitrophenol	ND		10	0.61	ug/L		04/19/21 11:23	04/23/21 23:26	1
4-Nitrophenol	ND		50	1.4	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodimethylamine	ND		10	0.67	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodi-n-propylamine	ND		1.9	0.71	ug/L		04/19/21 11:23	04/23/21 23:26	1
N-Nitrosodiphenylamine	ND		10	1.2	ug/L		04/19/21 11:23	04/23/21 23:26	1
2,2'-oxybis[1-chloropropane]	ND		1.9	0.58	ug/L		04/19/21 11:23	04/23/21 23:26	1
Pentachlorophenol	ND		50	8.5	ug/L		04/19/21 11:23	04/23/21 23:26	1
Phenanthrene	ND		1.9	0.55	ug/L		04/19/21 11:23	04/23/21 23:26	1
Phenol	ND		10	4.9	ug/L		04/19/21 11:23	04/23/21 23:26	1
Pyrene	ND		1.9		ug/L		04/19/21 11:23	04/23/21 23:26	1
1,2,4-Trichlorobenzene	ND		10		ug/L			04/23/21 23:26	1
2,4,6-Trichlorophenol	ND		10		ug/L		04/19/21 11:23	04/23/21 23:26	1
	MB								

2-Fluorobiphenyl 82 50 - 105 04/19/21 11:23 04/23/21 23:26 2-Fluorophenol 86 42 - 106 04/19/21 11:23 04/23/21 23:26 Nitrobenzene-d5 85 53 - 105 04/19/21 11:23 04/23/21 23:26 Phenol-d5 82 43 - 105 04/19/21 11:23 04/23/21 23:26

Limits

31 - 111

%Recovery

78

Qualifier

Eurofins TestAmerica, Pittsburgh

04/19/21 11:23 04/23/21 23:26

Analyzed

Prepared

Dil Fac

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-353647/1-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 353647

MB MB

Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed 2,4,6-Tribromophenol 04/19/21 11:23 04/23/21 23:26 50 29 - 122

Lab Sample ID: LCS 180-353647/2-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 353647

Analysis Batch. 334322	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	100	69.7		ug/L		70	47 - 145	
Acenaphthylene	100	70.6		ug/L		71	33 - 145	
Anthracene	100	69.6		ug/L		70	27 - 133	
Benzidine	100	ND		ug/L		24	5 - 100	
Benzo[a]anthracene	100	72.3		ug/L		72	33 - 143	
Benzo[a]pyrene	100	70.5		ug/L		70	17 - 150	
Benzo[b]fluoranthene	100	65.8		ug/L		66	24 - 150	
Benzo[g,h,i]perylene	100	78.3		ug/L		78	10 - 150	
Benzo[k]fluoranthene	100	64.8		ug/L		65	11 - 150	
Bis(2-chloroethoxy)methane	100	71.8		ug/L		72	33 - 150	
Bis(2-chloroethyl)ether	100	71.2		ug/L		71	12 - 150	
Bis(2-ethylhexyl) phthalate	100	76.2	J	ug/L		76	10 - 150	
4-Bromophenyl phenyl ether	100	73.0		ug/L		73	53 - 127	
Butyl benzyl phthalate	100	77.0		ug/L		77	10 - 150	
4-Chloro-3-methylphenol	100	69.6		ug/L		70	22 - 147	
2-Chloronaphthalene	100	69.7		ug/L		70	60 - 120	
2-Chlorophenol	100	73.4		ug/L		73	23 - 134	
4-Chlorophenyl phenyl ether	100	73.6		ug/L		74	25 - 150	
Chrysene	100	69.4		ug/L		69	17 - 150	
Dibenzo(a,h)-anthracene	100	78.2		ug/L		78	10 - 150	
3,3'-Dichlorobenzidine	100	70.5		ug/L		70	10 - 150	
2,4-Dichlorophenol	100	58.0		ug/L		58	39 - 135	
Diethyl phthalate	100	75.2		ug/L		75	10 - 120	
2,4-Dimethylphenol	100	71.1		ug/L		71	32 - 120	
Dimethyl phthalate	100	72.8		ug/L		73	10 - 120	
Di-n-butyl phthalate	100	71.6		ug/L		72	10 - 120	
4,6-Dinitro-2-methylphenol	200	121		ug/L		60	10 - 150	
2,4-Dinitrophenol	200	97.7	J	ug/L		49	10 - 150	
2,4-Dinitrotoluene	100	79.3		ug/L		79	39 - 139	
2,6-Dinitrotoluene	100	80.8		ug/L		81	50 - 150	
Di-n-octyl phthalate	100	62.3		ug/L		62	10 - 146	
1,2-Diphenylhydrazine(as	100	67.5		ug/L		67	42 - 107	
Azobenzene)								
Fluoranthene	100	73.0		ug/L		73	26 - 137	
Fluorene	100	71.6		ug/L		72	59 - 121	
Hexachlorobenzene	100	72.4		ug/L		72	10 - 150	
Hexachlorobutadiene	100	75.8		ug/L		76	24 - 120	
Hexachlorocyclopentadiene	100	59.8		ug/L		60	34 - 117	
Hexachloroethane	100	69.8		ug/L		70	40 - 120	
Indeno[1,2,3-cd]pyrene	100	78.4		ug/L		78	10 - 150	
Isophorone	100	77.5		ug/L		77	21 - 150	
Naphthalene	100	71.7		ug/L		72	21 - 133	

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-353647/2-A

Matrix: Water

Analysis Batch: 354322

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 353647

Job ID: 180-120179-1

%Rec.

7 , 0.0	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Nitrobenzene		77.2		ug/L		77	35 - 150
2-Nitrophenol	100	86.6		ug/L		87	29 - 150
4-Nitrophenol	200	134		ug/L		67	10 - 132
N-Nitrosodimethylamine	100	77.7		ug/L		78	39 - 125
N-Nitrosodi-n-propylamine	100	73.4		ug/L		73	10 - 150
N-Nitrosodiphenylamine	100	70.7		ug/L		71	48 - 100
2,2'-oxybis[1-chloropropane]	100	85.9		ug/L		86	36 - 150
Pentachlorophenol	200	109		ug/L		54	14 - 150
Phenanthrene	100	66.2		ug/L		66	54 - 120
Phenol	100	75.4		ug/L		75	10 - 120
Pyrene	100	71.9		ug/L		72	52 - 120
1,2,4-Trichlorobenzene	100	72.3		ug/L		72	44 - 142
2,4,6-Trichlorophenol	100	74.7		ug/L		75	37 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	77		50 - 105
2-Fluorophenol	80		42 - 106
Nitrobenzene-d5	80		53 - 105
Phenol-d5	77		43 - 105
Terphenyl-d14	74		31 - 111
2,4,6-Tribromophenol	57		29 - 122

Lab Sample ID: 180-120179-1 MS

Matrix: Water

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA Prep Batch: 353647

Analysis Batch: 354322									Prep Batch: 353647
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthene	ND		94.3	67.5		ug/L		72	47 - 145
Acenaphthylene	ND		94.3	68.0		ug/L		72	33 - 145
Anthracene	ND		94.3	70.2		ug/L		74	27 - 133
Benzidine	ND	F1	94.3	ND	F1	ug/L		0	5 - 100
Benzo[a]anthracene	ND		94.3	72.8		ug/L		77	33 - 143
Benzo[a]pyrene	ND		94.3	72.5		ug/L		77	17 - 150
Benzo[b]fluoranthene	ND		94.3	70.4		ug/L		75	24 - 150
Benzo[g,h,i]perylene	ND		94.3	83.2		ug/L		88	10 - 150
Benzo[k]fluoranthene	ND		94.3	66.6		ug/L		71	11 - 150
Bis(2-chloroethoxy)methane	ND		94.3	67.0		ug/L		71	33 - 150
Bis(2-chloroethyl)ether	ND		94.3	66.3		ug/L		70	12 - 150
Bis(2-ethylhexyl) phthalate	ND		94.3	77.7	J	ug/L		82	10 - 150
4-Bromophenyl phenyl ether	ND		94.3	73.2		ug/L		78	53 - 127
Butyl benzyl phthalate	ND		94.3	75.2		ug/L		80	10 - 150
4-Chloro-3-methylphenol	ND		94.3	69.5		ug/L		74	22 - 147
2-Chloronaphthalene	ND		94.3	66.6		ug/L		71	60 - 120
2-Chlorophenol	ND		94.3	64.5		ug/L		68	23 - 134
4-Chlorophenyl phenyl ether	ND		94.3	70.2		ug/L		74	25 - 150
Chrysene	ND		94.3	71.9		ug/L		76	17 - 150
Dibenzo(a,h)-anthracene	ND		94.3	81.8		ug/L		87	10 - 150
3,3'-Dichlorobenzidine	ND		94.3	74.5		ug/L		79	10 - 150

Eurofins TestAmerica, Pittsburgh

5/10/2021

Page 22 of 32

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

MS MS

Project/Site: Cytec Havre de Grace MD

Method: EPA 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Sample Sample

Lab Sample ID: 180-120179-1 MS

Matrix: Water

Analysis Batch: 354322

Client Sample ID: POTW OUTFALL (041621)

Prep Type: Total/NA

Prep Batch: 353647 %Rec.

5	 	

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,4-Dichlorophenol	ND		94.3	55.9		ug/L		59	39 - 135	
Diethyl phthalate	ND		94.3	61.7		ug/L		65	10 - 120	
2,4-Dimethylphenol	ND		94.3	67.8		ug/L		72	32 - 120	
Dimethyl phthalate	ND		94.3	53.3		ug/L		57	10 - 120	
Di-n-butyl phthalate	ND		94.3	72.8		ug/L		77	10 - 120	
4,6-Dinitro-2-methylphenol	ND		189	82.4		ug/L		44	10 - 150	

Spike

2,4-Dichlorophenol	ND	94.3	55.9	ug/L	59	39 - 135	
Diethyl phthalate	ND	94.3	61.7	ug/L	65	10 - 120	
2,4-Dimethylphenol	ND	94.3	67.8	ug/L	72	32 - 120	
Dimethyl phthalate	ND	94.3	53.3	ug/L	57	10 - 120	
Di-n-butyl phthalate	ND	94.3	72.8	ug/L	77	10 - 120	
4,6-Dinitro-2-methylphenol	ND	189	82.4	ug/L	44	10 - 150	
2,4-Dinitrophenol	ND	189	80.4 J	ug/L	43	10 - 150	
2,4-Dinitrotoluene	ND	94.3	66.2	ug/L	70	39 - 139	
2,6-Dinitrotoluene	ND	94.3	65.8	ug/L	70	50 - 150	
Di-n-octyl phthalate	ND	94.3	64.4	ug/L	68	10 - 146	
1,2-Diphenylhydrazine(as	ND	94.3	69.0	ug/L	73	42 - 107	
Azobenzene)							
Fluoranthene	ND	94.3	74.7	ug/L	79	26 - 137	
Fluorene	ND	94.3	69.7	ug/L	74	59 - 121	
Hexachlorobenzene	ND	94.3	69.9	ug/L	74	10 - 150	
Hexachlorobutadiene	ND	94.3	65.8	ug/L	70	24 - 120	
Hexachlorocyclopentadiene	ND	94.3	38.5	ug/L	41	34 - 117	
Hexachloroethane	ND	94.3	54.3	ug/L	58	40 - 120	
Indeno[1,2,3-cd]pyrene	ND	94.3	82.2	ug/L	87	10 - 150	
Isophorone	ND	94.3	72.2	ug/L	77	21 - 150	
Naphthalene	ND	94.3	65.5	ug/L	69	21 - 133	
Nitrobenzene	ND	94.3	55.9	ug/L	59	35 - 150	
2-Nitrophenol	ND	94.3	50.9	ug/L	54	29 - 150	
4-Nitrophenol	ND	189	117	ug/L	62	10 - 132	
N-Nitrosodimethylamine	ND	94.3	68.6	ug/L	73	39 - 125	
N-Nitrosodi-n-propylamine	ND	94.3	69.2	ug/L	73	10 - 150	
N-Nitrosodiphenylamine	ND	94.3	69.1	ug/L	73	48 - 100	
2,2'-oxybis[1-chloropropane]	ND	94.3	78.3	ug/L	83	36 - 150	
Pentachlorophenol	ND	189	118	ug/L	63	14 - 150	
Phenanthrene	ND	94.3	69.7	ug/L	74	54 - 120	
Phenol	ND	94.3	62.3	ug/L	66	10 - 120	
Pyrene	ND	94.3	72.7	ug/L	77	52 - 120	
1,2,4-Trichlorobenzene	ND	94.3	64.0	ug/L	68	44 - 142	
2,4,6-Trichlorophenol	ND	94.3	71.7	ug/L	76	37 - 144	

•	MC
ა	IVIS

	MS	WS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	73		50 - 105
2-Fluorophenol	71		42 - 106
Nitrobenzene-d5	61		53 - 105
Phenol-d5	67		43 - 105
Terphenyl-d14	74		31 - 111
2,4,6-Tribromophenol	65		29 - 122

Client: ARCADIS U.S. Inc

MR MR

Job ID: 180-120179-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 200.7 Rev 4 - Metals (ICP)

Lab Sample ID: MB 180-355176/1-A

Matrix: Water

Analysis Batch: 355531

Client Sample ID: Method Blank **Prep Type: Total Recoverable**

Prep Batch: 355176

	1410	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		5.0	0.83	ug/L		04/30/21 08:48	05/03/21 14:53	1
Arsenic	ND		10	6.4	ug/L		04/30/21 08:48	05/03/21 14:53	1
Cadmium	ND		5.0	0.30	ug/L		04/30/21 08:48	05/03/21 14:53	1
Chromium	ND		5.0	0.71	ug/L		04/30/21 08:48	05/03/21 14:53	1
Copper	ND		25	4.1	ug/L		04/30/21 08:48	05/03/21 14:53	1
Lead	ND		10	2.8	ug/L		04/30/21 08:48	05/03/21 14:53	1
Nickel	ND		40	1.6	ug/L		04/30/21 08:48	05/03/21 14:53	1
Zinc	ND		20	19	ug/L		04/30/21 08:48	05/03/21 14:53	1

Lab Sample ID: LCS 180-355176/2-A

Matrix: Water

Analysis Batch: 355531

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Client Sample ID: Method Blank

05/05/21 11:43 05/06/21 10:20

Client Sample ID: Lab Control Sample

%Rec.

Limits

85 - 115

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 355618

Prep Type: Total/NA

Prep Batch: 355618

Analyzed

Prep Batch: 355176

LCS LCS Spike %Rec. Analyte Added Result Qualifier D %Rec Limits Unit Silver 250 87 85 - 115 217 ug/L Arsenic 1000 1070 ug/L 107 85 - 115 Cadmium 500 534 ug/L 107 85 - 115 500 503 101 Chromium ug/L 85 - 115 500 516 103 85 - 115 Copper ug/L ug/L 500 485 97 85 - 115 Lead Nickel 500 499 ug/L 100 85 - 115 Zinc 250 257 85 - 115 ug/L 103

RL

0.20

Spike

Added

2.50

MDL Unit

0.13 ug/L

LCS LCS

2.60

Result Qualifier

Method: EPA 245.1 Rev. - Mercury (CVAA)

Lab Sample ID: MB 180-355618/1-A

Matrix: Water

Analysis Batch: 355935

MB MB

Analyte Result Qualifier Mercury $\overline{\mathsf{ND}}$

Lab Sample ID: LCS 180-355618/2-A

Matrix: Water

Analysis Batch: 355935

Analyte

Mercury

Method: SM 4500CN E - Total Cyanide

Lab Sample ID: MB 180-354482/4-A **Matrix: Water**

Analysis Batch: 354705

MB MB

Analyte Cyanide, Total

Result Qualifier ND

RL **MDL** Unit 0.010 0.0080 mg/L

Unit

ug/L

Prepared 04/24/21 18:00 04/26/21 17:37

Prepared

%Rec

104

Analyzed Dil Fac

Prep Type: Total/NA

Prep Batch: 354482

Eurofins TestAmerica, Pittsburgh

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Method: SM 4500CN E - Total Cyanide (Continued)

Analyte

Cyanide, Total

Lab Sample ID: HLCS 180-354482/2-A				Clie	nt Sai	mple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 354705							Prep Batch: 354482
	Spike	HLCS	HLCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.250	0.248		mg/L		99	90 - 110
Lab Sample ID: LCS 180-354482/3-A				Clie	nt Saı	nple ID	: Lab Control Sample
Matrix: Water							Prep Type: Total/NA
Analysis Batch: 354705							Prep Batch: 354482
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.200	0.205		mg/L		103	90 - 110
Lab Sample ID: LLCS 180-354482/1-A Matrix: Water Analysis Batch: 354705				Clie	nt Saı	mple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 354482

LLCS LLCS

0.0519

Result Qualifier Unit

mg/L

Spike

Added

0.0500

%Rec.

Limits

90 - 110

D %Rec

QC Association Summary

Client: ARCADIS U.S. Inc

Project/Site: Cytec Havre de Grace MD

Job ID: 180-120179-1

GC/MS VOA

Analysis Batch: 354671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	EPA 624	
180-120179-2	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-354671/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-354671/1004	Lab Control Sample	Total/NA	Water	EPA 624	
180-120179-1 DU	POTW OUTFALL (041621)	Total/NA	Water	EPA 624	

Analysis Batch: 355217

Lab Sample ID 180-120179-1 - RADL	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-355217/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-355217/1002	Lab Control Sample	Total/NA	Water	EPA 624	

GC/MS Semi VOA

Prep Batch: 353647

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method 625	Prep Batch
MB 180-353647/1-A	Method Blank	Total/NA	Water	625	
LCS 180-353647/2-A	Lab Control Sample	Total/NA	Water	625	
180-120179-1 MS	POTW OUTFALL (041621)	Total/NA	Water	625	

Analysis Batch: 354322

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method EPA 625	Prep Batch 353647
MB 180-353647/1-A	Method Blank	Total/NA	Water	EPA 625	353647
LCS 180-353647/2-A	Lab Control Sample	Total/NA	Water	EPA 625	353647
180-120179-1 MS	POTW OUTFALL (041621)	Total/NA	Water	EPA 625	353647

Metals

Prep Batch: 355176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total Recoverable	Water	200.7	
MB 180-355176/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 180-355176/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 355531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total Recoverable	Water	EPA 200.7 Rev 4	355176
MB 180-355176/1-A	Method Blank	Total Recoverable	Water	EPA 200.7 Rev 4	355176
LCS 180-355176/2-A	Lab Control Sample	Total Recoverable	Water	EPA 200.7 Rev 4	355176

Prep Batch: 355618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	245.1	
MB 180-355618/1-A	Method Blank	Total/NA	Water	245.1	
LCS 180-355618/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 355935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	EPA 245.1 Rev.	355618
MB 180-355618/1-A	Method Blank	Total/NA	Water	EPA 245.1 Rev.	355618

Eurofins TestAmerica, Pittsburgh

Page 26 of 32 5/10/2021

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QC Association Summary

Client: ARCADIS U.S. Inc Job ID: 180-120179-1

Project/Site: Cytec Havre de Grace MD

Metals (Continued)

Analys	is Batch:	355935	(Continued)
Allalva	ıs Dalcıı.	33333	l Oullillueu

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-355618/2-A	Lab Control Sample	Total/NA	Water	EPA 245.1 Rev.	355618

General Chemistry

Prep Batch: 354482

Lab Sample ID 180-120179-1	Client Sample ID POTW OUTFALL (041621)	Prep Type Total/NA	Matrix Water	Method SM 4500 CN C	Prep Batch
MB 180-354482/4-A	Method Blank	Total/NA	Water	SM 4500 CN C	
HLCS 180-354482/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LCS 180-354482/3-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	
LLCS 180-354482/1-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C	

Analysis Batch: 354705

Lab Sample ID MB 180-354482/4-A	Client Sample ID Method Blank	Prep Type Total/NA	Matrix Water	Method SM 4500CN E	Prep Batch 354482
HLCS 180-354482/2-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482
LCS 180-354482/3-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482
LLCS 180-354482/1-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	354482

Analysis Batch: 354706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-120179-1	POTW OUTFALL (041621)	Total/NA	Water	SM 4500CN E	354482

Sample learliteation Sumple Sample (Sample Sample Committee Sumple Sample Sampl
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A Waste Codes for the sample in the Punknown Reunknown Realis 4//6/21 11/0 300 4 1/6/21 20 Date/Time:
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Habita No.: Cooler Temp. (*C): Obs'd: Corrd: Company; Company



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ORIGIN I D. KEUA SETH CAPLAN TSS CONNELLEY DR EUTRORIES TESTAMERICA SUITE SUITE SUITE STATES US

SAMPLE RECEIVING
301 ALPHA DR

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PITTSBURGH PA 15238

REF: ARCADIS CYTEC

SSSIQXE PER SERVICE OF THE SERVICE O



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Part # 156297-435 RRDW2

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Eurofins TestAmerica, Pittsburgh	30			eurofins
Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468		Chain of Custody Record		Chylomen lexung America
Client Information	Sampler:	Lab PM: Brown, Shafi	Carrier Tracking No(s):	COC No: 180-69728-13680.1
Client Contact: Mr. Chad Crocker	Phone:	E-Mail: Shali.Brown@Eurofinset.com	State of Origin:	Page:
Company: Bridgestone Metalpha U.S.A	PWSID:	Analysis	Analysis Reguested	Job #:
Address: 570 International Blvd	Due Date Requested:			8
Gity. Clarksville	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip: TN, 37040	Compliance Project: A Yes A No	12-93		
Phone:	PO#: 7200008713 for 2021	. 6010E		F - MeOH R - Na2S203 G - Amchlor S - H2SO4
Email: CrockerChad@bfusa.com	WO#:	No)	S	I - Ice J - DI Water
Project Name: Bridgestone Metalpha	Project #: 18022858	SE Or I	aniet	K - EDTA L - EDA
Site:	SSOW#:	SD (Y	oo jo	Other:
Sample Identification	Sample Cample (G=comp.		otal Number	
	X	tion Code: X N N A N		Special instructions/Note:
e Characte	4/16/21 1335 6	×		
32				
Possible Hazard Identification Xon-Hazard	□ Poison B □ Unknown □ Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Mont	etained longer than 1 month) Archive For
		Special Instructions/QC Requirements:		
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	7
Reinquired by	Date/Tigne: $4/16/2$ / 2 / 350	2	assar	1-31 Compare TAP
Reiniduished by:	Date/Time:		Date/Tighe:	M 1 33 Company
Kelinquished by:	Date/Time:	Company Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) "C and Other Remarks	ier Remarks:	
021				Ver: 11:01/2020

Page 31 of 32

5/10/2021

Client: ARCADIS U.S. Inc Job Number: 180-120179-1

Login Number: 120179 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

September 2, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – August 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of August 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of August 2021. The monthly certification form is included as Attachment A.

For the month of August, the system pumped an estimated 210,250 gallons of wastewater at an estimated average flow rate of 4.71 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 4.71 gallons per minute for the month of August satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of August.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of August and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of August.

On July 9, 2021, the motor at MW-10D overloaded and failed to start and the system was turned off. A replacement motor and motor lead were ordered and the system remained off until the replacement parts were installed on August 16, 2021. Three consecutive daily pH readings are shown after the system was restarted on August 16, 2021. A P-100/P-200 drive fault alarm was received and the system was automatically shut down on August 25, 2021. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. This alarm was cleared by on-site personnel and the system was restarted within 24 hours. On August 26, 2021, Arcadis staff were onsite for routine system sampling. The system remained on during the routine sampling event.

The September 2021 Periodic Compliance Report will be submitted in August 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Amanda Bucci HSE Manager

Enclosure

Mr. Luis Pizarro, United States Environmental Protection Agency cc:

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for August 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
08/01/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/02/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/03/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/04/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/05/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/06/21	18,395,419	4,183,051	3,184,818	25,763,288	0	4.82
08/07/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/08/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/09/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/10/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/11/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/12/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/13/21	18,395,419	4,183,051	3,184,818	25,763,288	0	5.15
08/14/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/15/21	18,395,419	4,183,051	3,184,818	25,763,288	0	
08/16/21	18,395,419	4,183,051	3,184,818	25,763,288	12,426	5.28
08/17/21	18,402,960	4,184,484	3,188,270	25,775,714	14,635	5.24
08/18/21	18,411,938	4,186,184	3,192,227	25,790,349	14,500	5.36
08/19/21	18,420,914	4,187,882	3,196,053	25,804,849	14,425	
08/20/21	18,429,888	4,189,582	3,199,804	25,819,274	14,386	5.44
08/21/21	18,438,867	4,191,288	3,203,505	25,833,660	14,340	
08/22/21	18,447,842	4,192,990	3,207,168	25,848,000	2,925	
08/23/21	18,449,675	4,193,340	3,207,910	25,850,925	12,573	
08/24/21	18,457,688	4,194,855	3,210,955	25,863,498	13,063	
08/25/21	18,466,051	4,196,437	3,214,073	25,876,561	13,970	
08/26/21	18,474,931	4,198,115	3,217,485	25,890,531	14,060	
08/27/21	18,483,904	4,199,777	3,220,910	25,904,591	14,048	5.49
08/28/21	18,492,876	4,201,472	3,224,291	25,918,639	13,752	
08/29/21	18,501,853	4,203,170	3,227,368	25,932,391	13,779	
08/30/21	18,510,828	4,204,868	3,230,474	25,946,170	13,717	
08/31/21	18,519,803	4,206,565	3,233,519	25,959,887	13,651	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.

Table 2 Operational Issues for August 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
7/9/2021	MW-10D Transducer Failure, P-300 Overload Fault	A MW-10D transducer failure alarm was triggered when Arcadis staff attempted to restart the system. The pump motor at MW-10D was determined to be faulty and a replacement motor and motor lead were ordered. The system remained shut down until the parts were replaced on 8/16/2021. The alarms were cleared and the system was restarted.
8/25/2021	D 100/D 200 Drive Fault	A P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by onsite personnel and the system was restarted within 24 hours.
8/26/2021	O&M	Arcadis staff onsite to conduct routine system sampling. The system remained on during the sampling event.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	August 2021	
TOTAL VOLUME DISCHARGED	210,250 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accurat	document and all attachments were preparem designed to assure that qualified personsed on my inquiry of the person or persons regathering the information, the information te, and complete. I am aware that there are the possibility of fine and imprisonment for	onnel properly gather and who manage the system, submitted is, to the best of re significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

October 12, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – September 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of September 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of September 2021. The monthly certification form is included as Attachment A.

For the month of September, the system pumped an estimated 297,500 gallons of wastewater at an estimated average flow rate of 6.89 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 6.89 gallons per minute for the month of September satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of September.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of September and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of September.

An EW-01 sump high level alarm was received on September 13, 2021. This alarm was triggered when Arcadis staff opened the well during the annual sampling event and standing water on the well lid entered the vault. Arcadis staff cleared the alarm, and the system was restarted within 24 hours. An E-stop and P-100/P-200 drive fault alarms were received and the system was automatically shut down on September 16 and September 22, 2021. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. This alarm was cleared by on-site personnel and the system was restarted within 24 hours. An EW-02 low flow alarm was received on September 19, 2021; Arcadis staff will respond to this alarm in mid-October to replace the pump in EW-02 and increase flow at this extraction well. Several low pH alarms were received starting on September 24, 2021, and the system was shut down. This alarm occurs when the pH of the discharge from EW-01 falls below 5.00. Arcadis staff cleared the alarms remotely and the system was restarted on September 27, 2021. Three consecutive daily pH readings are shown after the system was restarted on September 27, 2021.

The October 2021 Periodic Compliance Report will be submitted in November 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Amanda Bucci HSE Manager

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis

Ms. Amanda Turner, Arcadis

Table 1 Flow and pH Monitoring for August 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
09/01/21	18,528,778	4,208,262	3,236,498	25,973,538	13,585	
09/02/21	18,537,759	4,209,969	3,239,395	25,987,123	13,528	
09/03/21	18,546,740	4,211,674	3,242,237	26,000,651	13,475	5.50
09/04/21	18,555,720	4,213,380	3,245,026	26,014,126	13,423	
09/05/21	18,564,700	4,215,085	3,247,764	26,027,549	13,372	
09/06/21	18,573,679	4,216,794	3,250,448	26,040,921	13,302	
09/07/21	18,582,656	4,218,496	3,253,071	26,054,223	13,241	
09/08/21	18,591,634	4,220,200	3,255,630	26,067,464	13,171	
09/09/21	18,600,610	4,221,899	3,258,126	26,080,635	13,117	
09/10/21	18,609,591	4,223,605	3,260,556	26,093,752	13,053	5.49
09/11/21	18,618,573	4,225,312	3,262,920	26,106,805	12,988	
09/12/21	18,627,554	4,227,017	3,265,222	26,119,793	12,912	
09/13/21	18,636,529	4,228,716	3,267,460	26,132,705	12,445	
09/14/21	18,645,354	4,230,384	3,269,412	26,145,150	12,484	
09/15/21	18,654,328	4,232,082	3,271,224	26,157,634	11,754	
09/16/21	18,662,882	4,233,701	3,272,805	26,169,388	12,161	
09/17/21	18,671,859	4,235,393	3,274,297	26,181,549	11,960	5.55
09/18/21	18,680,835	4,237,085	3,275,589	26,193,509	11,264	
09/19/21	18,689,811	4,238,778	3,276,184	26,204,773	10,679	
09/20/21	18,698,790	4,240,478	3,276,184	26,215,452	10,683	
09/21/21	18,707,770	4,242,181	3,276,184	26,226,135	5,527	
09/22/21	18,712,420	4,243,059	3,276,184	26,231,662	5,527	
09/23/21	18,717,069	4,243,936	3,276,184	26,237,189	8,159	
09/24/21	18,723,926	4,245,237	3,276,185	26,245,348	304	5.60
09/25/21	18,724,181	4,245,285	3,276,186	26,245,652	0	
09/26/21	18,724,181	4,245,285	3,276,186	26,245,652	0	
09/27/21	18,724,181	4,245,285	3,276,186	26,245,652	1,809	5.32
09/28/21	18,725,701	4,245,574	3,276,186	26,247,461	2,220	5.41
09/29/21	18,727,568	4,245,927	3,276,186	26,249,681	10,662	5.52
09/30/21	18,736,525	4,247,632	3,276,186	26,260,343	10,695	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for September 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Response
9/13/2021	An EW-01 sump high level alarm was received. This alarm was triggered when Arcadis staff opened the well lid during the annual sampling event and standing water on the well lid entered the vault. The alarm was cleared and the system was restarted within 24 hours.
9/16/2021 & 9/22/2021	A E-stop and P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by on-site personnel and the system was restarted within 24 hours.
9/19/2021	An EW-02 low flow alarm was received. Arcadis staff will respond to this alarm in mid-October to replace the pump in EW-02 and increase flow at this extraction well.
9/24/2021	Several low pH alarms were received, indicating pH of discharge from EW-01 was less than 5.00. The alarms were cleared remotely and the system was restarted on 9/27/2021.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	September 2021
TOTAL VOLUME DISCHARGED	297,500 Gallons
supervision in accordance with a system evaluate the information submitted. Bate or those persons directly responsible for my knowledge and belief, true, accura	document and all attachments were prepared under my direction or em designed to assure that qualified personnel properly gather and used on my inquiry of the person or persons who manage the system, or gathering the information, the information submitted is, to the best of the, and complete. I am aware that there are significant penalties for the possibility of fine and imprisonment for knowing violations."
 Date	Authorized Representative



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

November 8, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – October 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of October 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of October 2021. The monthly certification form is included as Attachment A.

For the month of October, the system pumped an estimated 275,860 gallons of wastewater at an estimated average flow rate of 6.18 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 6.18 gallons per minute for the month of October satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of October.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of October and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of October.

An EW-02 low flow alarm was received on September 19, 2021; Arcadis staff responded to this alarm on October 18, 2021 to replace the pump in EW-02 and increase flow at this extraction well. Two low pH alarms were received on October 3 and October 17, 2021. This alarm occurs when the pH of the discharge from EW-01 falls below 5.00. The pH probe is faulty and a replacement has been ordered; this alarm is currently disabled. An E-Stop alarm was received on October 11 and October 28, 2021 and the system was automatically shut down. A P-100/P-200 drive fault alarm was received on October 28 and October 31 and the system was automatically shut down. These three alarms may occur when the facility experiences a power fluctuation and requires a system reset. These alarms were cleared by on-site personnel and the system was restarted within 24 hours in each instance. On October 22, 2021, an EW-02 transducer failure alarm was received, and the system was automatically shut down. This alarm occurred due to a faulty transducer in the EW-02 well. This transducer was removed from the well on October 27, 2021 for repairs and will be reinstalled once the repaired transducer is received from manufacturer. The system was restarted on October 27, 2021. Three consecutive daily pH readings are shown after the

Ms. Jennie Kilby November 8, 2021 Page 2 of 2

system was restarted on October 27, 2021. On October 26, 2021, an EW-01 pipe leak alarm was received, while system was already shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm.

The November 2021 Periodic Compliance Report will be submitted in December 2021. Daily flow and pH will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez HSE Manager

Enclosure

cc: Mr. Luis Pizarro, United States Environmental Protection Agency

Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Shwetha Sridharan, Arcadis

Table 1 Flow and pH Monitoring for October 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
10/01/21	18,745,511	4,249,341	3,276,186	26,271,038	10,697	5.66
10/02/21	18,754,498	4,251,051	3,276,186	26,281,735	10,687	
10/03/21	18,763,480	4,252,756	3,276,186	26,292,422	10,678	
10/04/21	18,772,459	4,254,455	3,276,186	26,303,100	10,672	
10/05/21	18,781,437	4,256,149	3,276,186	26,313,772	10,677	
10/06/21	18,790,419	4,257,844	3,276,186	26,324,449	10,678	
10/07/21	18,799,398	4,259,543	3,276,186	26,335,127	10,684	
10/08/21	18,808,380	4,261,245	3,276,186	26,345,811	10,682	5.65
10/09/21	18,817,360	4,262,947	3,276,186	26,356,493	10,681	
10/10/21	18,826,340	4,264,648	3,276,186	26,367,174	10,687	
10/11/21	18,835,321	4,266,354	3,276,186	26,377,861	10,627	
10/12/21	18,844,253	4,268,049	3,276,186	26,388,488	10,677	
10/13/21	18,853,234	4,269,745	3,276,186	26,399,165	10,684	
10/14/21	18,862,217	4,271,446	3,276,186	26,409,849	10,685	
10/15/21	18,871,200	4,273,148	3,276,186	26,420,534	10,679	5.65
10/16/21	18,880,180	4,274,847	3,276,186	26,431,213	10,692	
10/17/21	18,889,167	4,276,552	3,276,186	26,441,905	10,703	
10/18/21	18,898,158	4,278,264	3,276,186	26,452,608	9,012	
10/19/21	18,905,391	4,279,629	3,276,600	26,461,620	10,682	
10/20/21	18,914,370	4,281,322	3,276,610	26,472,302	10,670	
10/21/21	18,923,348	4,283,014	3,276,610	26,482,972	10,678	
10/22/21	18,932,326	4,284,706	3,276,618	26,493,650	5,873	5.65
10/23/21	18,937,268	4,285,637	3,276,618	26,499,523	0	
10/24/21	18,937,268	4,285,637	3,276,618	26,499,523	0	
10/25/21	18,937,268	4,285,637	3,276,618	26,499,523	0	
10/26/21	18,937,268	4,285,637	3,276,618	26,499,523	0	
10/27/21	18,937,268	4,285,637	3,276,618	26,499,523	9,043	5.72
10/28/21	18,944,877	4,287,071	3,276,618	26,508,566	10,409	5.66
10/29/21	18,953,627	4,288,730	3,276,618	26,518,975	10,692	5.66
10/30/21	18,962,612	4,290,437	3,276,618	26,529,667	10,685	
10/31/21	18,971,594	4,292,140	3,276,618	26,540,352	6,546	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.

Table 2 Operational Issues for October 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
10/3/2021 & 10/17/2021	Low pH	Two low pH alarms were received, indicating pH of discharge from EW-01 was less than 5.00. The pH probe is faulty and a replacement has been ordered. The pH alarm is currently disabled.
10/11/2021	E-Stop	An E-stop alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by on-site personnel and the system was restarted within 24 hours.
10/18/2021	Routine O&M	Arcadis staff were onsite to replace the pump in EW-02 and increase flow at this extraction well.
10/22/2021	EW-02 Transducer Failure	An EW-02 transducer failure alarm was received and the system was automatically shut down. This alarm occurred due to a faulty transducer in the EW-02 well. This transducer was removed from the well on 10/27/2021 for repairs and will be reinstalled once the repaired transducer is received from manufacturer. The system was restarted on 10/27/2021.
10/26/2021	EW-01 Pipe Leak	An EW-01 pipe leak alarm was received while the system was already shut down. This alarm typically occurs during rain events when runoff infiltrates the EW-01 vault, triggering the alarm.
10/28/2021	E-Stop, P-100/P-200 Drive Fault	An E-stop and P-100 and P-200 drive fault alarms were received and the system was automatically shut down. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. The alarms were cleared by on-site personnel and the system was restarted within 24 hours.
10/31/2021	P-100/P-200 Drive Fault	A P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by onsite personnel and the system was restarted within 24 hours.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	October 2021	
TOTAL VOLUME DISCHARGED	275,860 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accura	document and all attachments were preparem designed to assure that qualified personsed on my inquiry of the person or persons gathering the information, the information ste, and complete. I am aware that there ar the possibility of fine and imprisonment for	onnel properly gather and who manage the system, submitted is, to the best of re significant penalties for
 Date	Authorized Representative	



Cytec Solvay Group 1300 Revolution Street Havre de Grace, MD 21078 410.939.1910

December 2, 2021

Ms. Jennie Kilby Industrial Pretreatment Coordinator City of Havre de Grace Department of Public Works 711 Pennington Avenue Havre de Grace, Maryland 21078

Re: CYTEC SOLVAY GROUP AEROSPACE MATERIALS

Periodic Compliance Report – November 2021

Permit Number: CYT-2015-101

Dear Ms. Kilby:

CYTEC SOLVAY GROUP (Cytec) has prepared this Periodic Compliance Report for the month of November 2021 in accordance with the conditions set forth in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). This Periodic Compliance Report presents the results of all monitoring requirements and operational issues encountered during the month of November 2021. The monthly certification form is included as Attachment A.

For the month of November, the system pumped an estimated 274,168 gallons of wastewater at an estimated average flow rate of 6.35 gallons per minute to the City of Havre de Grace Wastewater Treatment Plant during active system operation. The estimated average flow rate of 6.35 gallons per minute for the month of November satisfied both permit flow limitations (maximum of 30,000 gallons per day; 30-minute maximum of 1,000 gallons). Cytec complied with all permit conditions for flow for the month of November.

One pH meter is presently installed in-line with the effluent discharge pipe to measure pH continuously. pH results from the effluent wastewater complied with all permit conditions for pH during the month of November and no significant deviations were noted during active operation. Table 1 presents the daily flow volumes and weekly pH readings recorded for the month of November.

On November 2, 2021 and November 3, 2021, Arcadis staff were onsite for routine operation and maintenance activities, including quarterly system sampling, permit-required semi-annual POTW outfall sampling, and cleaning pump MW-10D. EW-01 was unable to be cleaned due to an issue with the wire while pulling up the pump. An Arcadis staff with the necessary electrical training will be scheduled to clean this pump in early 2022. A P-100/P-200 drive fault alarm was received on November 16 and November 25 and the system was automatically shut down. On November 29, an E-stop alarm was received. These alarms may occur when the facility experiences a power fluctuation and requires a system reset. The alarm on November 16, 2021 was cleared by on-site personnel and the system was restarted within 24 hours. After the November 25, 2021 alarm, the system remained shut down until the alarm was cleared by on-site personnel and the system restarted on December 1, 2021.

The December 2021 Periodic Compliance Report will be submitted in January 2022. Daily flow and pH

will continue to be measured continuously. If the system is shut down for a period of at least 24 hours, pH results will be monitored and reported for three consecutive days to maintain compliance with permit conditions.

The second semi-annual effluent grab sample for 2021 was collected from the point of discharge at the POTW on November 2, 2021. The effluent grab sample was analyzed for Priority Pollutant volatile organic compounds, semi-volatile organic compounds, metals, and cyanide. Analytical results for the effluent groundwater samples are compared to the effluent limitations specified in Cytec's Industrial User Wastewater Discharge Permit (Permit No. CYT-2015-101). As summarized in the table below, no exceedances of the effluent limitations were observed. The analytical laboratory report is presented as Attachment B.

Parameter	Effluent Limitations (μg/l)	November 2021 POTW Discharge (μg/l)
Total Arsenic	4,060	ND
Total Cadmium	90	ND
Total Chromium	390	ND
Total Copper	80	ND
Total Lead	650	ND
Total Nickel	780	13 J
Total Silver	50	ND
Total Zinc	9,300	30
Total Mercury	0.3	ND
Total Cyanide	180	ND

If you have any questions or comments, please contact me at 443-252-1093.

Sincerely, Cytec Solvay Group

Jose Cortez HSE Manager

Enclosure

cc:

Mr. Luis Pizarro, United States Environmental Protection Agency Mr. Paul Nemanic, Cytec Solvay Group Ms. Tina Armstrong, Ph.D., Arcadis Ms. Shwetha Sridharan, Arcadis

Table 1 Flow and pH Monitoring for November 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Cumulative Total Gallons Extracted (MW-10D)	Cumulative Total Gallons Extracted (EW-01)	Cumulative Total Gallons Extracted (EW-02)	Combined Cumulative Total Gallons Extracted	Daily Total Gallons Extracted	pН
11/01/21	18,977,098	4,293,182	3,276,618	26,546,898	0	
11/02/21	18,977,098	4,293,182	3,276,618	26,546,898	14,113	
11/03/21	18,985,756	4,294,815	3,280,439	26,561,011	14,113	
11/04/21	18,994,414	4,296,449	3,284,260	26,575,123	14,113	
11/05/21	19,003,072	4,298,082	3,288,081	26,589,236	14,113	
11/06/21	19,011,730	4,299,716	3,291,903	26,603,348	14,113	
11/07/21	19,020,388	4,301,349	3,295,724	26,617,461	14,113	
11/08/21	19,029,046	4,302,983	3,299,545	26,631,573	14,113	
11/09/21	19,037,704	4,304,616	3,303,366	26,645,686	14,401	
11/10/21	19,046,691	4,306,320	3,307,076	26,660,087	14,306	
11/11/21	19,055,676	4,308,023	3,310,694	26,674,393	11,657	
11/12/21	19,064,660	4,309,721	3,311,669	26,686,050	10,685	
11/13/21	19,073,644	4,311,422	3,311,669	26,696,735	10,694	
11/14/21	19,082,632	4,313,128	3,311,669	26,707,429	10,693	
11/15/21	19,091,621	4,314,832	3,311,669	26,718,122	9,459	
11/16/21	19,099,568	4,316,344	3,311,669	26,727,581	7,978	
11/17/21	19,106,270	4,317,620	3,311,669	26,735,559	10,694	
11/18/21	19,115,258	4,319,326	3,311,669	26,746,253	10,686	
11/19/21	19,124,242	4,321,028	3,311,669	26,756,939	10,699	
11/20/21	19,133,231	4,322,738	3,311,669	26,767,638	10,702	
11/21/21	19,142,221	4,324,450	3,311,669	26,778,340	10,699	
11/22/21	19,151,210	4,326,160	3,311,669	26,789,039	10,702	
11/23/21	19,160,200	4,327,872	3,311,669	26,799,741	11,021	
11/24/21	19,169,191	4,329,584	3,311,987	26,810,762	10,304	
11/25/21	19,177,847	4,331,232	3,311,987	26,821,066	0	
11/26/21	19,177,847	4,331,232	3,311,987	26,821,066	0	
11/27/21	19,177,847	4,331,232	3,311,987	26,821,066	0	
11/28/21	19,177,847	4,331,232	3,311,987	26,821,066	0	_
11/29/21	19,177,847	4,331,232	3,311,987	26,821,066	0	
11/30/21	19,177,847	4,331,232	3,311,987	26,821,066	0	

Notes:

- 1. Operation of the expanded system began on January 16, 2015.
- 2. Totalizer readings are collected daily at 0800 at EW-01 and EW-02. In May 2018, the totalizer at MW-10D rolled over to a value greater than 10 million and the value was no longer presented on the system data tab. As a result, the totalizer reading was estimated between May 2018 and August 2019, based on the total flow in gallons recorded for the previous 24 hours. A system update was completed in August 2019 that reduced the totalizer reading for MW-10D by 10 million gallons.
- 3. Italics indicates estimated value for monthly and daily flow.

Table 2 Operational Issues for November 2021 Cytec Solvay Group Havre de Grace, Maryland

Date	Root Cause for Alarm	Response
11/2/2021 & 11/3/2021	Routine O&M	Arcadis staff were onsite to conduct routine O&M, including quarterly system sampling and pump cleaning at MW-10D. Pump at EW-01 unable to be cleaned due to wiring issue while extracting the pump. An Arcadis staffer with necessary electrical training will be scheduled to clean this pump in early 2022.
11/16/2021	P-100/P-200 Drive Fault	A P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by onsite personnel and the system was restarted within 24 hours.
11/25/2021	P-100/P-200 Drive Fault	A P-100 and P-200 drive fault alarm was received and the system was automatically shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by onsite personnel and the system was rrestarted on 12/1/2021.
11/29/2021	E-Stop	An E-stop alarm was received while the system was already shut down. This alarm may occur when the facility experiences a power fluctuation and requires a system reset. The alarm was cleared by on-site personnel and the system was restarted on 12/1/2021.

CYTEC SOLVAY GROUP PERIODIC COMPLIANCE REPORT

REPORTING MONTH/YEAR	November 2021	
TOTAL VOLUME DISCHARGED	274,168 Gallons	
supervision in accordance with a syste evaluate the information submitted. Ba or those persons directly responsible fo my knowledge and belief, true, accura	document and all attachments were prepared under em designed to assure that qualified personnel pro ased on my inquiry of the person or persons who ma or gathering the information, the information submitte te, and complete. I am aware that there are signification the possibility of fine and imprisonment for knowing	operly gather and nage the system, and is, to the best of cant penalties for
 Date	Authorized Representative	-



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-129527-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan



Authorized for release by: 11/18/2021 3:03:57 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD Laboratory Job ID: 180-129527-1

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	10
QC Sample Results	19
QC Association Summary	38
Chain of Custody	41
Receipt Checklists	44

4

6

8

9

11

12

Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-129527-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-129527-1

Receipt

The samples were received on 11/4/2021 10:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7° C.

GC/MS VOA

The following samples were received preserved with hydrochloric acid: POTW OUTFALL(110221) (180-129527-1) and TRIP BLANK (180-129527-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Due to the concentration of target compounds detected, several samples were analyzed at a dilution. The reporting limits have been adjusted accordingly.

Samples EW-2 (110221) (180-129527-4) and EFFLUENT (110221) (180-129527-6) have analysis dates and times of 11/08/2021 12:03 & 12:32 AM. The dates were actually but it is actually 11/09/2021. The date did not change due to daylight saving time.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 180-377745 recovered outside control limits for Bromoform. This analyte was biased high in the LCS and was not detected in the associated samples: therefore, the data have been reported.

The relative percent difference between the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 180-377745 was outside of the control limits for Bromomethane. The recoveries were within the control limits. All data was reported.

The laboratory control sample (LCS) for analytical batch 180-378302 recovered outside control limits for the following analytes: Acrylonitrile. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compound was not detected in the samples, the data have been reported and qualified.

The laboratory control sample (LCS) for analytical batch 180-378302 recovered outside control limits for the following analytes: Carbon tetrachloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for batch 180-378902 recovered outside control limits for Bromoform. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The laboratory control sample (LCS) for analytical batch 180-379035 recovered outside control limits for Bromoform. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

The continuing calibration verification (CCV) associated with batch 180-378187 recovered above the upper control limit for total cyanide. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

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 Qualifier
 Qualifier Description

 * LCS and/or LCSD is outside acceptance limits, low biased.

 *+
 LCS and/or LCSD is outside acceptance limits, high biased.

*1 LCS/LCSD RPD exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier Qualifier Description

^+ Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

Eurofins TestAmerica, Pittsburgh

Page 4 of 44

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11/18/2021

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22
Virginia	NELAP	10043	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129527-1	POTW OUTFALL(110221)	Water	11/02/21 14:30	11/04/21 10:45
180-129527-2	TRIP BLANK	Water	11/02/21 00:00	11/04/21 10:45
180-129527-3	EW-1 (110221)	Water	11/02/21 13:45	11/04/21 10:45
180-129527-4	EW-2 (110221)	Water	11/02/21 13:40	11/04/21 10:45
180-129527-5	MW-10D(110221)	Water	11/02/21 13:50	11/04/21 10:45
180-129527-6	EFFLUENT (110221)	Water	11/02/21 13:55	11/04/21 10:45
180-129527-7	TRIP BLANK	Water	11/02/21 00:00	11/04/21 10:45

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Method Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method **Method Description** Protocol Laboratory Volatile Organic Compounds (GC/MS) **EPA 624** 40CFR136A TAL PIT EPA 624.1 Volatile Organic Compounds (GC/MS) 40CFR136A **TAL PIT** 40 CFR 761 EPA 625.1 Semivolatile Organic Compounds (GC/MS) **TAL PIT** EPA 200.7 Rev 4 Metals (ICP) EPA TAL PIT EPA 245.1 Rev. Mercury (CVAA) **EPA** TAL PIT SM 4500CN E Total Cyanide SMTAL PIT 200.7 Preparation, Total Recoverable Metals EPA TAL PIT 245.1 Preparation, Mercury **EPA TAL PIT** 625 Liquid-Liquid Extraction 40CFR136A **TAL PIT** SM 4500 CN C Cyanide, Distillation TAL PIT SM

Protocol References:

40 CFR 761 = Toxic Substances Control Act (TSCA)

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

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Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624.1 nt ID: CHHP6		1	5 mL	5 mL	378694	11/12/21 13:31	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624.1 nt ID: CHHP6	DL	150	5 mL	5 mL	379035	11/16/21 22:33	C1K	TAL PIT
Total/NA	Prep	625			260 mL	250 uL	378109	11/08/21 13:28	BJT	TAL PIT
Total/NA	Analysis Instrumer	EPA 625.1 nt ID: CH71		1	1 mL	1 mL	378351	11/11/21 16:55	VVP	TAL PIT
Total Recoverable Total Recoverable	Prep Analysis Instrumer	200.7 EPA 200.7 Rev 4 at ID: C		1	50 mL	50 mL	377852 378321	11/08/21 11:30 11/10/21 01:37		TAL PIT TAL PIT
Total/NA	Prep	245.1			25 mL	25 mL	377755	11/05/21 08:16	RJR	TAL PIT
Total/NA	Analysis Instrumer	EPA 245.1 Rev. nt ID: HGY		1			378250	11/09/21 10:45	RJR	TAL PIT
Total/NA	Prep	SM 4500 CN C			6 mL	6 mL	378062	11/08/21 11:30	CMR	TAL PIT
Total/NA	Analysis Instrumer	SM 4500CN E at ID: SEAL2		1			378187	11/08/21 15:11	CMR	TAL PIT

Client Sample ID: TRIP BLANK

Date Collected: 11/02/21 00:00 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-2

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 624.1 at ID: CHHP6		1	5 mL	5 mL	378694	11/12/21 14:30	C1K	TAL PIT
Total/NA	Analysis Instrumer	EPA 624.1	RA	1	5 mL	5 mL	378902	11/15/21 12:51	PJJ	TAL PIT

Client Sample ID: EW-1 (110221)

Date Collected: 11/02/21 13:45

Date Received: 11/04/21 10:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6		1	5 mL	5 mL	377745	11/05/21 20:44	PJJ	TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6	DL	40	5 mL	5 mL	377976	11/08/21 05:28	PJJ	TAL PIT

Client Sample ID: EW-2 (110221)

Lab Sample ID: 180-129527-4 Date Collected: 11/02/21 13:40 **Matrix: Water** Date Received: 11/04/21 10:45

Prep Type Total/NA	Batch Type Analysis Instrumen	Batch Method EPA 624 t ID: CHHP6	Run	Pactor 1	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 377745	Prepared or Analyzed 11/05/21 20:14	Analyst PJJ	Lab TAL PIT
Total/NA	Analysis Instrumen	EPA 624 at ID: CHHP6	DL	1250	5 mL	5 mL	378019	11/08/21 00:32	C1K	TAL PIT

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Page 8 of 44

Lab Sample ID: 180-129527-3

Matrix: Water

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-10D(110221) Lab Sample ID: 180-129527-5

Date Collected: 11/02/21 13:50 **Matrix: Water** Date Received: 11/04/21 10:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745	11/05/21 19:44	PJJ	TAL PIT
	Instrumen	t ID: CHHP6								
Total/NA	Analysis	EPA 624	DL	50	5 mL	5 mL	378302	11/09/21 20:42	SW1	TAL PIT
	Instrumen	t ID: CHHP6								

Client Sample ID: EFFLUENT (110221) Lab Sample ID: 180-129527-6

Date Collected: 11/02/21 13:55 **Matrix: Water** Date Received: 11/04/21 10:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745	11/05/21 19:15	PJJ	TAL PIT
	Instrumer	t ID: CHHP6								
Total/NA	Analysis	EPA 624	DL	750	5 mL	5 mL	378019	11/08/21 00:03	C1K	TAL PIT
	Instrumer	t ID: CHHP6								

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-129527-7 Date Collected: 11/02/21 00:00 **Matrix: Water**

Date Received: 11/04/21 10:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 624		1	5 mL	5 mL	377745			TAL PIT
	Instrumer	nt ID: CHHP6								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BJT = Bill Trout

CMR = Carl Reagle

RGM = Rebecca Manns

RJR = Ron Rosenbaum

Batch Type: Analysis

C1K = Chamaiporn Krisorn

CMR = Carl Reagle

PJJ = Patrick Journet

RJG = Rob Good

RJR = Ron Rosenbaum

SW1 = Sunan Wang-un

VVP = Vincent Piccolino

Eurofins TestAmerica, Pittsburgh

Page 9 of 44

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 13:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 13:31	1
1,1,2-Trichloroethane	7.3		1.0	0.45	ug/L			11/12/21 13:31	1
1,1-Dichloroethane	1.4		1.0	0.31	ug/L			11/12/21 13:31	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 13:31	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 13:31	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/12/21 13:31	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/12/21 13:31	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/12/21 13:31	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/12/21 13:31	1
Acrolein	ND		20	16	ug/L			11/12/21 13:31	1
Acrylonitrile	ND		20	7.8	ug/L			11/12/21 13:31	1
Benzene	ND		1.0	0.60	ug/L			11/12/21 13:31	1
Bromoform	ND		1.0	0.98	ug/L			11/12/21 13:31	1
Bromomethane	ND		1.0	0.89	ug/L			11/12/21 13:31	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/12/21 13:31	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/12/21 13:31	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/12/21 13:31	1
Chloromethane	ND		1.0	0.90	ug/L			11/12/21 13:31	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/12/21 13:31	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/12/21 13:31	1
Chloroethane	ND		1.0	0.90	ug/L			11/12/21 13:31	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/12/21 13:31	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/12/21 13:31	1
Toluene	ND		1.0	0.46	ug/L			11/12/21 13:31	1
trans-1,2-Dichloroethene	1.0		1.0	0.67	ug/L			11/12/21 13:31	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/12/21 13:31	1
Trichloroethene	0.82	J	1.0	0.69	ug/L			11/12/21 13:31	1
Chloroform	ND		1.0	0.60	ug/L			11/12/21 13:31	1
Vinyl chloride	17		1.0	0.40	ug/L			11/12/21 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		41 - 122			-		11/12/21 13:31	1
Toluene-d8 (Surr)	89		53 - 125					11/12/21 13:31	1
1,2-Dichloroethane-d4 (Surr)	89		28 - 163					11/12/21 13:31	1
Dibromofluoromethane (Surr)	105		59 - 168					11/12/21 13:31	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	2400		150	86	ug/L			11/16/21 22:33	150
Methylene Chloride	3900		150	130	ug/L			11/16/21 22:33	150
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	58		41 - 122					11/16/21 22:33	150
Toluene-d8 (Surr)	87		53 - 125					11/16/21 22:33	150
1,2-Dichloroethane-d4 (Surr)	89		28 - 163					11/16/21 22:33	150
1,2-Dichioroctilatic-a+ (carr)	• • • • • • • • • • • • • • • • • • • •								

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Lab Sample ID: 180-129527-1

Date Collected: 11/02/21 14:30 **Matrix: Water** Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Acenaphthylene	ND		0.18	0.063	ug/L		11/08/21 13:28	11/11/21 16:55	
Acenaphthene	ND		0.18	0.063	ug/L		11/08/21 13:28	11/11/21 16:55	
Anthracene	ND		0.18	0.047	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzidine	ND	F1	19	8.8	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[a]anthracene	ND		0.18	0.072	-		11/08/21 13:28	11/11/21 16:55	
Benzo[b]fluoranthene	ND		0.18	0.093	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[k]fluoranthene	ND		0.18	0.085	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[g,h,i]perylene	ND		0.18	0.066	ug/L		11/08/21 13:28	11/11/21 16:55	
Benzo[a]pyrene	ND		0.18	0.051	ug/L		11/08/21 13:28	11/11/21 16:55	
Bis(2-chloroethyl)ether	ND		0.18	0.038	ug/L		11/08/21 13:28	11/11/21 16:55	
Bis(2-ethylhexyl) phthalate	ND		9.6		ug/L		11/08/21 13:28	11/11/21 16:55	
4-Bromophenyl phenyl ether	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Butyl benzyl phthalate	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
4-Chloro-3-methylphenol	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2-Chloronaphthalene	ND	F1	0.18	0.057	_		11/08/21 13:28	11/11/21 16:55	
2-Chlorophenol	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Chrysene	ND		0.18	0.078	-		11/08/21 13:28	11/11/21 16:55	
Dibenzo(a,h)-anthracene	ND		0.18	0.069	-		11/08/21 13:28	11/11/21 16:55	
	0.78		0.96	0.71	ug/L		11/08/21 13:28	11/11/21 16:55	
Di-n-butyl phthalate 3,3'-Dichlorobenzidine	ND	J	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dichlorophenol	ND		0.30	0.049	•		11/08/21 13:28	11/11/21 16:55	
Diethyl phthalate	ND		0.16		ug/L ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dimethylphenol	ND		0.96		ug/L ug/L		11/08/21 13:28	11/11/21 16:55	
•	ND ND		0.96		-				
Dimethyl phthalate					ug/L		11/08/21 13:28	11/11/21 16:55	
4,6-Dinitro-2-methylphenol	ND		4.8		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dinitrophenol	ND		9.6		ug/L		11/08/21 13:28	11/11/21 16:55	
2,4-Dinitrotoluene	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
2,6-Dinitrotoluene	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Di-n-octyl phthalate	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Fluoranthene	ND		0.18	0.058			11/08/21 13:28	11/11/21 16:55	
Fluorene	ND	F1	0.18	0.066	-		11/08/21 13:28	11/11/21 16:55	
Hexachlorobenzene	ND		0.18	0.054	-		11/08/21 13:28	11/11/21 16:55	
Hexachlorobutadiene	ND		0.18	0.066			11/08/21 13:28	11/11/21 16:55	
Hexachlorocyclopentadiene	ND	F1	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Hexachloroethane	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
ndeno[1,2,3-cd]pyrene	ND		0.18	0.082			11/08/21 13:28	11/11/21 16:55	
sophorone	ND		0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
Naphthalene	ND		0.18	0.057	-		11/08/21 13:28	11/11/21 16:55	
Nitrobenzene	ND		1.9		ug/L		11/08/21 13:28	11/11/21 16:55	
2-Nitrophenol	ND		0.96	0.19	ug/L		11/08/21 13:28	11/11/21 16:55	
1-Nitrophenol	ND		4.8		ug/L		11/08/21 13:28	11/11/21 16:55	
N-Nitrosodimethylamine	ND		0.96	0.064			11/08/21 13:28	11/11/21 16:55	
N-Nitrosodiphenylamine	ND	F1	0.96		ug/L		11/08/21 13:28	11/11/21 16:55	
N-Nitrosodi-n-propylamine	ND		0.18	0.068	-		11/08/21 13:28	11/11/21 16:55	
2,2'-oxybis[1-chloropropane]	ND		0.18	0.056	ug/L		11/08/21 13:28	11/11/21 16:55	
Pentachlorophenol	ND		4.8	0.81	ug/L		11/08/21 13:28	11/11/21 16:55	
Phenanthrene	ND		0.18	0.053			11/08/21 13:28	11/11/21 16:55	
Phenol	ND		0.96	0.47	ug/L		11/08/21 13:28	11/11/21 16:55	
Pyrene	ND		0.18	0.052			11/08/21 13:28	11/11/21 16:55	

Eurofins TestAmerica, Pittsburgh

Page 11 of 44

Job ID: 180-129527-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: POTW OUTFALL(110221)

Date Collected: 11/02/21 14:30 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-1

Matrix: Water

Analyte	Result Qua	alifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND ND	0.96	0.13	ug/L		11/08/21 13:28	11/11/21 16:55	1
2,4,6-Trichlorophenol	ND	0.96	0.22	ug/L		11/08/21 13:28	11/11/21 16:55	1
Bis(2-chloroethoxy)methane	ND	0.96	0.15	ug/L		11/08/21 13:28	11/11/21 16:55	1
4-Chlorophenyl phenyl ether	ND	0.96	0.21	ug/L		11/08/21 13:28	11/11/21 16:55	1
1,2-Diphenylhydrazine(as	ND	0.96	0.19	ug/L		11/08/21 13:28	11/11/21 16:55	1
Azobenzene)								
Surrogate	%Recovery Qu	alifier Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	53	47 - 107				11/08/21 13:28	11/11/21 16:55	1
2-Fluorophenol	51	35 - 109				11/08/21 13:28	11/11/21 16:55	1
2,4,6-Tribromophenol	40	32 - 127				11/08/21 13:28	11/11/21 16:55	1
Nitrobenzene-d5	49	47 - 110				11/08/21 13:28	11/11/21 16:55	1
Phenol-d5	50	37 - 110				11/08/21 13:28	11/11/21 16:55	1
		32 - 115				11/08/21 13:28	11/11/21 16:55	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	5.7	ug/L		11/08/21 11:30	11/10/21 01:37	1
Cadmium	ND		5.0	0.33	ug/L		11/08/21 11:30	11/10/21 01:37	1
Chromium	ND		5.0	2.6	ug/L		11/08/21 11:30	11/10/21 01:37	1
Copper	ND		25	3.9	ug/L		11/08/21 11:30	11/10/21 01:37	1
Lead	ND		10	2.3	ug/L		11/08/21 11:30	11/10/21 01:37	1
Nickel	13	J	40	2.1	ug/L		11/08/21 11:30	11/10/21 01:37	1
Silver	ND		5.0	0.87	ug/L		11/08/21 11:30	11/10/21 01:37	1
Zinc	30		20	3.3	ug/L		11/08/21 11:30	11/10/21 01:37	1

Method: EPA 245.1 Rev N	lercury (CVAA)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.13	ug/L		11/05/21 08:16	11/09/21 10:45	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.010	0.0080	mg/L		11/08/21 11:30	11/08/21 15:11	1

Client Sample ID: TRIP BLANK Lab Sample ID: 180-129527-2 Date Collected: 11/02/21 00:00 **Matrix: Water** Date Received: 11/04/21 10:45

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 14:30	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 14:30	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/12/21 14:30	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/12/21 14:30	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 14:30	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 14:30	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/12/21 14:30	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/12/21 14:30	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/12/21 14:30	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/12/21 14:30	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/12/21 14:30	1

Eurofins TestAmerica, Pittsburgh

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Date Collected: 11/02/21 00:00 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-2

Matrix: Water

Method: EPA 624.1 - Volatile O	Organic Compounds ((GC/MS) (Continued)
	5 1/ 6 UC	D. 140.

Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND ND		16	ug/L			11/12/21 14:30	1
Acrylonitrile	ND	20	7.8	ug/L			11/12/21 14:30	1
Benzene	ND	1.0	0.60	ug/L			11/12/21 14:30	1
Bromoform	ND	1.0	0.98	ug/L			11/12/21 14:30	1
Bromomethane	ND	1.0	0.89	ug/L			11/12/21 14:30	1
Carbon tetrachloride	ND	1.0	0.88	ug/L			11/12/21 14:30	1
Chlorobenzene	ND	1.0	0.50	ug/L			11/12/21 14:30	1
Dibromochloromethane	ND	1.0	0.84	ug/L			11/12/21 14:30	1
Chloromethane	ND	1.0	0.90	ug/L			11/12/21 14:30	1
cis-1,3-Dichloropropene	ND	1.0	0.59	ug/L			11/12/21 14:30	1
Bromodichloromethane	ND	1.0	0.64	ug/L			11/12/21 14:30	1
Chloroethane	ND	1.0	0.90	ug/L			11/12/21 14:30	1
Ethylbenzene	ND	1.0	0.51	ug/L			11/12/21 14:30	1
Tetrachloroethene	ND	1.0	0.47	ug/L			11/12/21 14:30	1
Toluene	ND	1.0	0.46	ug/L			11/12/21 14:30	1
trans-1,2-Dichloroethene	ND	1.0	0.67	ug/L			11/12/21 14:30	1
trans-1,3-Dichloropropene	ND	1.0	0.58	ug/L			11/12/21 14:30	1
Trichloroethene	ND	1.0	0.69	ug/L			11/12/21 14:30	1
Vinyl chloride	ND	1.0	0.40	ug/L			11/12/21 14:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		41 - 122		11/12/21 14:30	1
Toluene-d8 (Surr)	101		53 - 125		11/12/21 14:30	1
1,2-Dichloroethane-d4 (Surr)	107		28 - 163		11/12/21 14:30	1
Dibromofluoromethane (Surr)	119		59 - 168		11/12/21 14:30	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) - RA Result Qualifier

118

Allalyte	Result Qualif	IEI KL	MIDL	Ullit	U	riepaieu	Allalyzeu	DII Fac	
Methylene Chloride	ND ND	1.0	0.89	ug/L			11/15/21 12:51	1	
Chloroform	ND	1.0	0.60	ug/L			11/15/21 12:51	1	
Surrogate	%Recovery Qualif	ier Limits				Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	73	41 - 122			_		11/15/21 12:51	1	
Toluene-d8 (Surr)	77	53 - 125					11/15/21 12:51	1	
1 2-Dichloroethane-d4 (Surr)	127	28 - 163					11/15/21 12:51	1	

59 - 168

Client Sample ID: EW-1 (110221)

Date Collected: 11/02/21 13:45 Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Lab Sample ID: 180-129527-3

11/15/21 12:51

Matrix: Water

Method: EPA 624 - Volatile	Organic Compounds (GC	/MS)						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			11/05/21 20:44	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.60	ug/L			11/05/21 20:44	1
1,1,2-Trichloroethane	0.72 J	1.0	0.45	ug/L			11/05/21 20:44	1
1,1-Dichloroethane	ND	1.0	0.31	ug/L			11/05/21 20:44	1
1,1-Dichloroethene	ND	1.0	0.55	ug/L			11/05/21 20:44	1
1,2-Dichloropropane	ND	1.0	0.66	ug/L			11/05/21 20:44	1
1,2-Dichlorobenzene	ND	1.0	0.36	ug/L			11/05/21 20:44	1
1,3-Dichlorobenzene	ND	1.0	0.50	ug/L			11/05/21 20:44	1

Eurofins TestAmerica, Pittsburgh

Job ID: 180-129527-1

Client Sample ID: EW-1 (110221) Lab Sample ID: 180-129527-3

Date Collected: 11/02/21 13:45 Eas Sample 15. 160-120027-0

Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 20:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 20:44	1
Acrolein	ND		20	16	ug/L			11/05/21 20:44	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 20:44	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 20:44	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 20:44	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 20:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 20:44	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:44	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 20:44	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 20:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 20:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 20:44	1
Methylene Chloride	9.8		1.0	0.89	ug/L			11/05/21 20:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 20:44	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 20:44	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 20:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 20:44	1
Trichloroethene	7.3		1.0	0.69	ug/L			11/05/21 20:44	1
Vinyl chloride	1.0		1.0	0.40	ug/L			11/05/21 20:44	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 20:44	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 20:44	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4.0. Districtions of the control of the Committee of the			00 400			-		44/05/04 00:44	

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	66	28 - 163		11/05/21 20:44	1
4-Bromofluorobenzene (Surr)	66	41 - 122		11/05/21 20:44	1
Toluene-d8 (Surr)	97	53 - 125		11/05/21 20:44	1
Dibromofluoromethane (Surr)	99	59 - 168		11/05/21 20:44	1

Method: EPA 624 - Volatile	Organic Comp	ounds (G	C/MS) - DL					
Analyte	Result	Qualifier	RL	MDL U	nit [D Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	380		40	23 ug	g/L		11/08/21 05:28	40
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	69		28 - 163				11/08/21 05:28	40
4-Bromofluorobenzene (Surr)	57		41 - 122				11/08/21 05:28	40
Toluene-d8 (Surr)	89		53 - 125				11/08/21 05:28	40

Client Sample ID: EW-2 (110221)

Date Collected: 11/02/21 13:40

Lab Sample ID: 180-129527-4

Matrix: Water

59 - 168

Date Collected: 11/02/21 13:40 Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Method: EPA 624 - Volatile Organic Compounds (GC/MS)									
Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac			
1,1,1-Trichloroethane	ND ND	1.0	0.60 ug/L		11/05/21 20:14	1			
1,1,2,2-Tetrachloroethane	ND	1.0	0.60 ug/L		11/05/21 20:14	1			
1,1,2-Trichloroethane	30	1.0	0.45 ug/L		11/05/21 20:14	1			
1,1-Dichloroethane	7.7	1.0	0.31 ug/L		11/05/21 20:14	1			
1,1-Dichloroethene	2.2	1.0	0.55 ug/L		11/05/21 20:14	1			

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11/18/2021

11/08/21 05:28

Page 14 of 44

4

6

8

10

19

13

Project/Site: Cytec Havre de Grace MD

Client Sample ID: EW-2 (110221)

Date Collected: 11/02/21 13:40 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-4

Matrix: Water

Method: EPA 624 -	Volatile Organic Compounds (GC/MS)) (Conti	nued)
Analyte	Result Qualifier	RL	MDL Unit

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 20:14	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 20:14	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:14	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 20:14	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 20:14	1
Acrolein	ND		20	16	ug/L			11/05/21 20:14	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 20:14	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 20:14	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 20:14	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 20:14	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 20:14	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 20:14	1
Chloroform	1.9		1.0	0.60	ug/L			11/05/21 20:14	1
Chloromethane	1.5		1.0	0.90	ug/L			11/05/21 20:14	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 20:14	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 20:14	1
Tetrachloroethene	3.1		1.0	0.47	ug/L			11/05/21 20:14	1
Toluene	0.75	J	1.0	0.46	ug/L			11/05/21 20:14	1
trans-1,2-Dichloroethene	12		1.0	0.67	ug/L			11/05/21 20:14	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 20:14	1
Trichloroethene	16		1.0	0.69	ug/L			11/05/21 20:14	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 20:14	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 20:14	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 20:14	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	42	28 - 163		11/05/21 20:14	1
4-Bromofluorobenzene (Surr)	66	41 - 122		11/05/21 20:14	1
Toluene-d8 (Surr)	93	53 - 125		11/05/21 20:14	1
Dibromofluoromethane (Surr)	91	59 - 168		11/05/21 20:14	1

Method: EPA	624 - Volatile Organ	ic Compounds	(GC/MS) - DL
A I 4 .		D 14 O 1161 .	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	4700		1300	720	ug/L			11/08/21 00:32	1250
Methylene Chloride	17000		1300	1100	ug/L			11/08/21 00:32	1250
Vinyl chloride	ND		1300	500	ug/L			11/08/21 00:32	1250

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	57		28 - 163		11/08/21 00:32	1250	
4-Bromofluorobenzene (Surr)	48		41 - 122		11/08/21 00:32	1250	
Toluene-d8 (Surr)	89		53 - 125		11/08/21 00:32	1250	
Dibromofluoromethane (Surr)	97		59 - 168		11/08/21 00:32	1250	

Client Sample ID: MW-10D(110221)

Date Collected: 11/02/21 13:50 Date Received: 11/04/21 10:45

Lab \$	Sample	ID:	180-129527-5

Matrix: Water

Method: EPA 624 - Volatile O	rganic Compounds (GC/N	VIS)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND —	1.0	0.60 ug/L			11/05/21 19:44	1
1,1,2,2-Tetrachloroethane	ND	1.0	0.60 ug/L			11/05/21 19:44	1

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Client Sample ID: MW-10D(110221)

Date Collected: 11/02/21 13:50 Date Received: 11/04/21 10:45 Lab Sample ID: 180-129527-5

Matrix: Water

Job ID: 180-129527-1

Method: EPA 624 - Volatile Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.73		1.0	0.45		= -		11/05/21 19:44	1
1,1-Dichloroethane	ND		1.0	0.31				11/05/21 19:44	
1,1-Dichloroethene	ND		1.0	0.55	-			11/05/21 19:44	1
1,2-Dichloropropane	ND		1.0		ug/L			11/05/21 19:44	1
1,2-Dichlorobenzene	ND		1.0		ug/L			11/05/21 19:44	1
1,3-Dichlorobenzene	ND		1.0	0.50	-			11/05/21 19:44	1
1,4-Dichlorobenzene	ND		1.0	0.54	•			11/05/21 19:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 19:44	1
Acrolein	ND		20	16	ug/L			11/05/21 19:44	1
Acrylonitrile	ND		20		ug/L			11/05/21 19:44	1
Benzene	ND		1.0	0.60				11/05/21 19:44	1
Bromoform	ND	*+	1.0	0.98	-			11/05/21 19:44	1
Bromomethane	ND	*1	1.0	0.89	-			11/05/21 19:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 19:44	1
Chlorobenzene	ND		1.0		ug/L			11/05/21 19:44	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 19:44	1
Chloromethane	ND		1.0	0.90				11/05/21 19:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 19:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 19:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 19:44	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 19:44	1
trans-1,2-Dichloroethene	1.3		1.0	0.67	ug/L			11/05/21 19:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 19:44	1
Trichloroethene	2.0		1.0	0.69	ug/L			11/05/21 19:44	1
Vinyl chloride	2.9		1.0	0.40	ug/L			11/05/21 19:44	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 19:44	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 19:44	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	65		28 - 163			-		11/05/21 19:44	1
4-Bromofluorobenzene (Surr)	71		41 - 122					11/05/21 19:44	1
Toluene-d8 (Surr)	91		53 - 125					11/05/21 19:44	1
Dibromofluoromethane (Surr)	97		59 - 168					11/05/21 19:44	1

Method: EPA 624 - Volatile	Organic Comp	ounds (G	C/MS) - DL						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	290		50	29	ug/L			11/09/21 20:42	50
Methylene Chloride	59		50	44	ug/L			11/09/21 20:42	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		28 - 163					11/09/21 20:42	50
4-Bromofluorobenzene (Surr)	87		41 - 122					11/09/21 20:42	50
Toluene-d8 (Surr)	105		53 - 125					11/09/21 20:42	50
Dibromofluoromethane (Surr)	141		59 - 168					11/09/21 20:42	50

Client Sample ID: EFFLUENT (110221)

Lab Sample ID: 180-129527-6

Date Collected: 11/02/21 13:55

Matrix: Water

Job ID: 180-129527-1

Date Received: 11/04/21 10:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 19:15	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 19:15	1
1,1,2-Trichloroethane	9.9		1.0	0.45	ug/L			11/05/21 19:15	1
1,1-Dichloroethane	3.1		1.0	0.31	ug/L			11/05/21 19:15	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 19:15	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 19:15	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 19:15	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 19:15	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 19:15	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 19:15	1
Acrolein	ND		20	16	ug/L			11/05/21 19:15	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 19:15	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 19:15	1
Bromoform	ND	*+	1.0	0.98	ug/L			11/05/21 19:15	1
Bromomethane	ND	*1	1.0	0.89	ug/L			11/05/21 19:15	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 19:15	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 19:15	1
Chloroform	0.92	J	1.0	0.60	ug/L			11/05/21 19:15	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 19:15	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 19:15	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 19:15	1
Tetrachloroethene	1.1		1.0	0.47	ug/L			11/05/21 19:15	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 19:15	1
trans-1,2-Dichloroethene	4.8		1.0	0.67	ug/L			11/05/21 19:15	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 19:15	1
Trichloroethene	7.5		1.0	0.69	ug/L			11/05/21 19:15	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 19:15	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 19:15	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 19:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	54		28 - 163			-		11/05/21 19:15	1
4-Bromofluorobenzene (Surr)	71		41 - 122					11/05/21 19:15	1
Toluene-d8 (Surr)	95		53 - 125					11/05/21 19:15	1
Dibromofluoromethane (Surr)	94		59 - 168					11/05/21 19:15	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	5800		750	430	ug/L			11/08/21 00:03	750
Methylene Chloride	19000		750	660	ug/L			11/08/21 00:03	750
Vinyl chloride	ND		750	300	ug/L			11/08/21 00:03	750
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	65		28 - 163					11/08/21 00:03	750
4-Bromofluorobenzene (Surr)	64		41 - 122					11/08/21 00:03	750
Toluene-d8 (Surr)	91		53 - 125					11/08/21 00:03	750
Dibromofluoromethane (Surr)	110		59 - 168					11/08/21 00:03	750

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Date Received: 11/04/21 10:45

Dibromofluoromethane (Surr)

Date Collected: 11/02/21 00:00

Lab Sample ID: 180-129527-7

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 17:47	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 17:47	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/05/21 17:47	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/05/21 17:47	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 17:47	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/05/21 17:47	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 17:47	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 17:47	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 17:47	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 17:47	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 17:47	1
Acrolein	ND		20	16	ug/L			11/05/21 17:47	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 17:47	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 17:47	1
Bromoform	ND 3	*+	1.0	0.98	ug/L			11/05/21 17:47	1
Bromomethane	ND ¹	*1	1.0	0.89	ug/L			11/05/21 17:47	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 17:47	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 17:47	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 17:47	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 17:47	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 17:47	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 17:47	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/05/21 17:47	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 17:47	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 17:47	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 17:47	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 17:47	1
Trichloroethene	ND		1.0	0.69	ug/L			11/05/21 17:47	1
Vinyl chloride	ND		1.0	0.40	ug/L			11/05/21 17:47	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 17:47	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 17:47	1
Chloroethane	ND		1.0	0.90	ug/L			11/05/21 17:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		28 - 163			·-		11/05/21 17:47	1
4-Bromofluorobenzene (Surr)	69		41 - 122					11/05/21 17:47	1
Toluene-d8 (Surr)	88		53 - 125					11/05/21 17:47	1

11/18/2021

11/05/21 17:47

59 - 168

106

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Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-377745/9

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Baton. 077740	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/05/21 14:17	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/05/21 14:17	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/05/21 14:17	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/05/21 14:17	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/05/21 14:17	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/05/21 14:17	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/05/21 14:17	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/05/21 14:17	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/05/21 14:17	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/05/21 14:17	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/05/21 14:17	1
Acrolein	ND		20	16	ug/L			11/05/21 14:17	1
Acrylonitrile	ND		20	7.8	ug/L			11/05/21 14:17	1
Benzene	ND		1.0	0.60	ug/L			11/05/21 14:17	1
Bromoform	ND		1.0	0.98	ug/L			11/05/21 14:17	1
Bromomethane	ND		1.0	0.89	ug/L			11/05/21 14:17	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/05/21 14:17	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/05/21 14:17	1
Chloroform	ND		1.0	0.60	ug/L			11/05/21 14:17	1
Chloromethane	ND		1.0	0.90	ug/L			11/05/21 14:17	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/05/21 14:17	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/05/21 14:17	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/05/21 14:17	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/05/21 14:17	1
Toluene	ND		1.0	0.46	ug/L			11/05/21 14:17	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/05/21 14:17	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/05/21 14:17	1
Trichloroethene	ND		1.0	0.69	ug/L			11/05/21 14:17	1
Vinyl chloride	ND		1.0	0.40	ug/L			11/05/21 14:17	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/05/21 14:17	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/05/21 14:17	1
Chloroethane	ND		1.0		ug/L			11/05/21 14:17	1

Surrogate	%Recovery	Qualifier Lim	nits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (S	Surr) 88	28 -	<u>- 163</u>		11/05/21 14:17	1
4-Bromofluorobenzene (Surr) 78	41 -	- 122		11/05/21 14:17	1
Toluene-d8 (Surr)	82	53 -	- 125		11/05/21 14:17	1
Dibromofluoromethane (Surr) 109	59 -	- 168		11/05/21 14:17	1

Lab Sample ID: LCS 180-377745/4

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sa	mple
Prep Type: Tot	al/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	9.47		ug/L		95	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	9.66		ug/L		97	60 - 140	
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	70 - 130	
1,1-Dichloroethane	10.0	9.59		ug/L		96	70 - 130	

Eurofins TestAmerica, Pittsburgh

11/18/2021

Page 19 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-377745/4

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

1,1-Dichloroethene 10.0 11.2 ug/L 112 50.150 1,2-Dichloroethane 10.0 9.86 ug/L 99 70.130 1,2-Dichloropenpane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.5 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 2-Chlorobethyl vinyl ether 20.0 6.59 ug/L 33 10.170 Acrolein 30.0 30.0 ug/L 100 60.140 Acrolein 30.0 10.5 ug/L 100 60.140 Bermonderbane 10.0 10.5	Analysis Batch: 017140	Spike	LCS	LCS				%Rec.
1,2-Dichloroethane 10.0 9.86 ug/L 99 70.130 1,2-Dichloropropane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichlorobenzene 10.0 10.1 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 10.1 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.3 ug/L 107 10.170 1,3-Dichloropenzene 10.0 10.3 ug/L 10.1 10.170 1,3-Dichloropenzene 10.0 10.0 ug/L 10.0 60.140 1,40 1,40 1,40 1,40 1,40 1,40 1,40 1	Analyte	Added	Result	Qualifier	Unit	D %	Rec	Limits
1,2-Dichloropropane 10.0 9.99 ug/L 100 35.165 1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65.135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70.130 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.3 ug/L 103 65.135 1,3-Dichlorobenzene 10.0 10.1 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 111 ug/L 111 60.140 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropenzene 10.0 10.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 13.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 13.5 ug/L 105 65.135 1,3-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 100 60.140 1,0-Dichloropropene 10.0 10.0 ug/L 103 60.140 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 10.3 ug/L 103 60.140 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.3 ug/L 113 65.135 1,0-Dichloropropene 10.0 11.3 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.4 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.3 ug/L 114 60.150 1,0-Dichloropropene 10.0 11.9 ug/L 119 70.135 1,0-Dichloropropene 10.	1,1-Dichloroethene	10.0	11.2		ug/L		112	50 - 150
1,2-Dichlorobenzene 10.0 10.2 ug/L 102 65 - 135 1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70 - 130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65 - 135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrolein 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 10.5 ug/L 106 70 - 130 Bromofentane 10.0 10.5 ug/L 106 70 - 130 Bromoform 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 10.0 ug/L 105 65 - 135 Bromoform 10.0 10.0 ug/L 100 60 - 140 Bromoform 10.0 10.0 ug/L 100 70 - 130 Bromoform 10.0 10.3 ug/L 103 60 - 140 Bromoform 10.0 10.3 ug/L 103 60 - 140 Bromoform 10.0 10.3 ug/L 103 70 - 130 Bromoform 10.0 10.3 ug/L 113 65 - 135 Bromoform 10.0 10.0 ug/L 100 70 - 130 Bromoform 10.0 10.0 ug/L 100 70 - 130 Bromoform 10.0 10.3 ug/L 113 65 - 135 Bromoform 10.0 10.0 ug/L 100 70 - 135 Bromoform 10.0 10.0 ug/L 100	1,2-Dichloroethane	10.0	9.86		ug/L		99	70 - 130
1,3-Dichlorobenzene 10.0 10.5 ug/L 105 70-130 1,4-Dichlorobenzene 10.0 10.3 ug/L 103 65-135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10-170 Acrolein 30.0 30.0 ug/L 100 60-140 Acrylonitrile 100 111 ug/L 111 60-140 3-Acrylonitrile 100 111 ug/L 111 60-140 3-Acrylonitrile 100 115 ug/L 105 65-135 3-35 3-35 3-35 3-35 3-35 3-35 3-35	1,2-Dichloropropane	10.0	9.99		ug/L		100	35 - 165
10.0 10.3 ug/L 10.3 65 - 135 2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 2-Chloroethyl vinyl ether 30.0 30.0 ug/L 100 60 - 140 2-Chloroethyl vinyl ether 100 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 110 111 ug/L 111 60 - 140 2-Chloroethyl vinyl ether 100 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl vinyl ether 10.0 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl vinyl ether 10.0 10.0 10.6 ug/L 106 70 - 130 2-Chloroethyl vinyl ether 10.0 10.5 ug/L 106 70 - 130 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 105 65 - 135 2-Chloroethyl ether 10.0 10.5 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 60 - 140 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 100 70 - 130 2-Chloroethyl ether 10.0 10.0 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug/L 114 50 - 150 2-Chloroethyl ether 10.0 11.3 ug	1,2-Dichlorobenzene	10.0	10.2		ug/L		102	65 - 135
2-Chloroethyl vinyl ether 20.0 6.59 ug/L 33 10 - 170 Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Carbon tetrachloride 10.0 10.5 ug/L 105 65 - 135 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 105 65 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 Cisis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Toluene 10.0 10.3 ug/L 103 70 - 130 Toluene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Winyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135 Chloromethane 10.0 10.7 ug/L 107 65 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloroethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 119 70 - 135 Chloromethane 10.0 11.9 ug/L 110 10 - 10 Chloroethane 10.0 11.9 ug/L 110 10 - 10 Chloroethane 10.0 11.9 ug/L 110	1,3-Dichlorobenzene	10.0	10.5		ug/L		105	70 - 130
Acrolein 30.0 30.0 ug/L 100 60 - 140 Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Toluene 10.0 10.3 ug/L 103 70 - 130 Trans-1,2-Dichloroethene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 113 65 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135	1,4-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135
Acrylonitrile 100 111 ug/L 111 60 - 140 Benzene 10.0 10.5 ug/L 105 65 - 135 Bromoform 10.0 14.2 *+ ug/L 142 70 - 130 Bromomethane 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 7.73 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 102 70 - 135 Chloromethane 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 13.5 ug/L 136 65 - 1370 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.0 ug/L 100 70 - 130 Tetrachloroethene 10.0 10.0 ug/L 103 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 Trans-1,2-Dichloropropene 10.0 11.4 ug/L 103 70 - 130 Trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 11.9 ug/L 119 70 - 135	2-Chloroethyl vinyl ether	20.0	6.59		ug/L		33	10 - 170
Benzene 10.0 10.5 ug/L 105 65 - 135 Benzene 10.0 14.2 *+ ug/L 142 70 - 130 Benzene 10.0 14.2 *+ ug/L 142 70 - 130 Benzene 10.0 9.27 ug/L 93 15 - 170 Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.5 ug/L 105 65 - 135 Chloromethane 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Cethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Tetrachloroethene 10.0 9.74 ug/L 97 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 103 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 103 70 - 130 Tetrachloroethene 10.0 10.3 ug/L 114 50 - 150 Trichloroethene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Winyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Beromodichloromethane 10.0 10.7 ug/L 107 65 - 135 Beromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Acrolein	30.0	30.0		ug/L		100	60 - 140
Stromoform 10.0 14.2 *+ ug/L 142 *70.130 15.170 10.0	Acrylonitrile	100	111		ug/L		111	60 - 140
Bromomethane 10.0 9.27 ug/L 93 15 - 170	Benzene	10.0	10.5		ug/L		105	65 - 135
Carbon tetrachloride 10.0 10.6 ug/L 106 70 - 130 Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Methylene Chloride 10.0 10.0 ug/L 100 70 - 130 Totrachloroethene 10.0 10.0 ug/L 97 70 - 130 Totluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 11 65 - 135 Vinyl chl	Bromoform	10.0	14.2	*+	ug/L		142	70 - 130
Chlorobenzene 10.0 10.5 ug/L 105 65 - 135 Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135	Bromomethane	10.0	9.27		ug/L		93	15 - 170
Chloroform 10.0 10.2 ug/L 102 70 - 135 Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Carbon tetrachloride	10.0	10.6		ug/L		106	70 - 130
Chloromethane 10.0 7.73 ug/L 77 10 - 170 cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 107 65 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chlorobenzene	10.0	10.5		ug/L		105	65 - 135
cis-1,3-Dichloropropene 10.0 13.5 ug/L 135 25 - 170 Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chloroform	10.0	10.2		ug/L		102	70 - 135
Ethylbenzene 10.0 10.0 ug/L 100 60 - 140 Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Chloromethane	10.0	7.73		ug/L		77	10 - 170
Methylene Chloride 10.0 10.3 ug/L 103 60 - 140 Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	cis-1,3-Dichloropropene	10.0	13.5		ug/L		135	25 - 170
Tetrachloroethene 10.0 10.0 ug/L 100 70 - 130 Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Ethylbenzene	10.0	10.0		ug/L		100	60 - 140
Toluene 10.0 9.74 ug/L 97 70 - 130 trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Methylene Chloride	10.0	10.3		ug/L		103	60 - 140
trans-1,2-Dichloroethene 10.0 10.3 ug/L 103 70 - 130 trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Tetrachloroethene	10.0	10.0		ug/L		100	70 - 130
trans-1,3-Dichloropropene 10.0 11.4 ug/L 114 50 - 150 Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Toluene	10.0	9.74		ug/L		97	70 - 130
Trichloroethene 10.0 11.3 ug/L 113 65 - 135 Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130
Vinyl chloride 10.0 7.08 ug/L 71 10 - 170 Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	trans-1,3-Dichloropropene	10.0	11.4		ug/L		114	50 - 150
Dibromochloromethane 10.0 11.9 ug/L 119 70 - 135 Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Trichloroethene	10.0	11.3		ug/L		113	65 - 135
Bromodichloromethane 10.0 10.7 ug/L 107 65 - 135	Vinyl chloride	10.0	7.08		ug/L		71	10 - 170
	Dibromochloromethane	10.0	11.9		ug/L		119	70 - 135
Chloroethane 10.0 8.32 ug/L 83 40 - 160	Bromodichloromethane	10.0	10.7		ug/L		107	65 - 135
· · · · · · · · · · · · · · · · · · ·	Chloroethane	10.0	8.32		ug/L		83	40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		28 - 163
4-Bromofluorobenzene (Surr)	93		41 - 122
Toluene-d8 (Surr)	93		53 - 125
Dibromofluoromethane (Surr)	114		59 - 168

Lab Sample ID: LCSD 180-377745/6

Matrix: Water

Analysis Batch: 377745

Client Sample II	ጋ: Lab	Control	Sam	ple Dup
		Prep T	ype: T	otal/NA

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	9.54		ug/L		95	70 - 130	1	20
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140	5	20
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	70 - 130	2	20
1,1-Dichloroethane	10.0	9.89		ug/L		99	70 - 130	3	20
1,1-Dichloroethene	10.0	11.8		ug/L		118	50 - 150	6	20
1,2-Dichloroethane	10.0	10.8		ug/L		108	70 - 130	9	20
1,2-Dichloropropane	10.0	10.6		ug/L		106	35 - 165	5	20
1,2-Dichlorobenzene	10.0	9.80		ug/L		98	65 - 135	4	20

Eurofins TestAmerica, Pittsburgh

11/18/2021

Page 20 of 44

Project/Site: Cytec Havre de Grace MD

Job ID: 180-129527-1

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 180-377745/6

Matrix: Water

Analysis Batch: 377745

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,3-Dichlorobenzene	10.0	10.3		ug/L		103	70 - 130	2	20
1,4-Dichlorobenzene	10.0	9.93		ug/L		99	65 - 135	4	20
2-Chloroethyl vinyl ether	20.0	7.98		ug/L		40	10 - 170	19	20
Acrolein	30.0	27.1		ug/L		90	60 - 140	10	20
Acrylonitrile	100	118		ug/L		118	60 - 140	6	20
Benzene	10.0	10.9		ug/L		109	65 - 135	4	20
Bromoform	10.0	13.7	*+	ug/L		137	70 - 130	4	20
Bromomethane	10.0	7.03	*1	ug/L		70	15 - 170	28	20
Carbon tetrachloride	10.0	8.91		ug/L		89	70 - 130	17	20
Chlorobenzene	10.0	10.0		ug/L		100	65 - 135	5	20
Chloroform	10.0	10.5		ug/L		105	70 - 135	3	20
Chloromethane	10.0	8.24		ug/L		82	10 - 170	6	20
cis-1,3-Dichloropropene	10.0	14.1		ug/L		141	25 - 170	4	20
Ethylbenzene	10.0	9.47		ug/L		95	60 - 140	6	20
Methylene Chloride	10.0	11.0		ug/L		110	60 - 140	6	20
Tetrachloroethene	10.0	9.31		ug/L		93	70 - 130	7	20
Toluene	10.0	9.33		ug/L		93	70 - 130	4	20
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130	1	20
trans-1,3-Dichloropropene	10.0	11.2		ug/L		112	50 - 150	2	20
Trichloroethene	10.0	10.8		ug/L		108	65 - 135	5	20
Vinyl chloride	10.0	7.10		ug/L		71	10 - 170	0	20
Dibromochloromethane	10.0	11.8		ug/L		118	70 - 135	1	20
Bromodichloromethane	10.0	12.3		ug/L		123	65 - 135	14	20
Chloroethane	10.0	7.98		ug/L		80	40 - 160	4	20

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		28 - 163
4-Bromofluorobenzene (Surr)	89		41 - 122
Toluene-d8 (Surr)	89		53 - 125
Dibromofluoromethane (Surr)	124		59 - 168

Lab Sample ID: MB 180-377976/6

Matrix: Water

Analysis Batch: 377976

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB RLMDL Unit Analyte Result Qualifier Prepared Analyzed Dil Fac 1,2-Dichloroethane ND 1.0 0.57 ug/L 11/07/21 18:37

ı		MB	MB				
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	94		28 - 163		11/07/21 18:37	1
	4-Bromofluorobenzene (Surr)	93		41 - 122		11/07/21 18:37	1
	Toluene-d8 (Surr)	86		53 - 125		11/07/21 18:37	1
	Dibromofluoromethane (Surr)	105		59 - 168		11/07/21 18:37	1

Spike

Job ID: 180-129527-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-377976/3

Matrix: Water

1,2-Dichloroethane

Analyte

Analysis Batch: 377976

Client Sample ID: Lab Control Sample Prep Type: Total/NA

%Rec.

Added Result Qualifier %Rec Limits Unit D 10.0 11.6 ug/L 116 70 - 130

LCS LCS

LCS LCS

%Recovery

91

Qualifier

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	113		28 - 163
4-Bromofluorobenzene (Surr)	89		41 - 122
Toluene-d8 (Surr)	86		53 - 125
Dibromofluoromethane (Surr)	119		59 - 168

Client Sample ID: Method Blank

Prep Type: Total/NA

Matrix: Water

Surrogate

1,2-Dichloroethane-d4 (Surr)

Analysis Batch: 378019

Lab Sample ID: MB 180-378019/8

MB MB RL **MDL** Unit D Dil Fac Analyte Result Qualifier Prepared Analyzed 1,1,1-Trichloroethane ND 1.0 0.60 ug/L 11/08/21 13:40 1,1,2,2-Tetrachloroethane ND 1.0 0.60 ug/L 11/08/21 13:40 1,1,2-Trichloroethane ND 1.0 0.45 ug/L 11/08/21 13:40 1,1-Dichloroethane ND 1.0 0.31 ug/L 11/08/21 13:40 1,1-Dichloroethene ND 1.0 0.55 ug/L 11/08/21 13:40 1,2-Dichloroethane ND 1.0 0.57 ug/L 11/08/21 13:40 ND 0.66 ug/L 1,2-Dichloropropane 1.0 11/08/21 13:40 1,2-Dichlorobenzene ND 1.0 0.36 ug/L 11/08/21 13:40 1.0 1.3-Dichlorobenzene ND 0.50 ug/L 11/08/21 13:40 1,4-Dichlorobenzene 11/08/21 13:40 ND 1.0 0.54 ug/L 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 11/08/21 13:40 Acrolein 20 11/08/21 13:40 ND 16 ug/L ND 20 7.8 ug/L Acrylonitrile 11/08/21 13:40 Benzene ND 1.0 0.60 ug/L 11/08/21 13:40 Bromoform ND 1.0 0.98 ug/L 11/08/21 13:40 Bromomethane ND 1.0 0.89 ug/L 11/08/21 13:40 Carbon tetrachloride ND 1.0 0.88 ug/L 11/08/21 13:40 Chlorobenzene ND 1.0 0.50 ug/L 11/08/21 13:40 Chloroform ND 1.0 0.60 ug/L 11/08/21 13:40 Chloromethane ND 0.90 ug/L 11/08/21 13:40 1.0 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/08/21 13:40 Ethylbenzene ND 1.0 0.51 ug/L 11/08/21 13:40 Methylene Chloride ND 1.0 0.89 ug/L 11/08/21 13:40 Tetrachloroethene ND 0.47 ug/L 1.0 11/08/21 13:40 Toluene ND 1.0 0.46 ug/L 11/08/21 13:40 trans-1.2-Dichloroethene ND 1.0 0.67 ug/L 11/08/21 13:40 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/08/21 13:40 Trichloroethene ND 11/08/21 13:40 1.0 0.69 ug/L Vinyl chloride ND 1.0 0.40 ug/L 11/08/21 13:40 Dibromochloromethane ND 1.0 0.84 ug/L 11/08/21 13:40 Bromodichloromethane ND 1.0 0.64 ug/L 11/08/21 13:40 Chloroethane ND 1.0 0.90 ug/L 11/08/21 13:40 MB MB

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Analyzed

11/08/21 13:40

Prepared

Page 22 of 44

Limits

28 - 163

10

11/18/2021

Dil Fac

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378019/8

Matrix: Water

Analysis Batch: 378019

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68		41 - 122		11/08/21 13:40	1
Toluene-d8 (Surr)	89		53 - 125		11/08/21 13:40	1
Dibromofluoromethane (Surr)	114		59 - 168		11/08/21 13:40	1

Lab Sample ID: LCS 180-378019/5

Matrix: Water

trans-1,2-Dichloroethene

trans-1,3-Dichloropropene

Dibromochloromethane

Bromodichloromethane

Trichloroethene

Vinyl chloride

Chloroethane

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 378019 Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits Analyte 1,1,1-Trichloroethane 10.0 7.14 ug/L 71 70 - 130 ug/L 10.0 9.67 97 60 - 1401,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 10.0 10.4 ug/L 104 70 - 130 1,1-Dichloroethane 10.0 8.56 ug/L 86 70 - 130 1,1-Dichloroethene 10.0 10.8 ug/L 108 50 - 150 1,2-Dichloroethane 10.0 8.37 ug/L 84 70 - 130 10.0 95 35 - 165 1,2-Dichloropropane 9.45 ug/L 1,2-Dichlorobenzene 73 10.0 7.25 ug/L 65 - 1351.3-Dichlorobenzene 10.0 ug/L 94 70 - 130 9.42 1,4-Dichlorobenzene 10.0 8.85 ug/L 89 65 - 135 2-Chloroethyl vinyl ether 20.0 5.81 ug/L 29 10 - 170 Acrolein 30.0 29.2 97 60 - 140 ug/L 100 117 Acrylonitrile 117 ug/L 60 - 140 Benzene 10.0 9.72 ug/L 97 65 - 135**Bromoform** 10.0 11.8 118 70 - 130 ug/L Bromomethane 10.0 7.95 ug/L 79 15 - 170 Carbon tetrachloride 10.0 7.14 ug/L 71 70 - 130 Chlorobenzene 10.0 9.34 ug/L 93 65 - 135Chloroform 10.0 82 70 - 135 8.24 ug/L 67 Chloromethane 10.0 6.71 ug/L 10 - 170 cis-1,3-Dichloropropene 10.0 11.4 ug/L 114 25 - 170 Ethylbenzene 10.0 86 60 - 1408.64 ug/L Methylene Chloride 10.0 10.4 ug/L 104 60 - 140 70 - 130 10.0 83 Tetrachloroethene 8.27 ug/L Toluene 10.0 8.60 ug/L 86 70 - 130

10.0

10.0

10.0

10.0

10.0

10.0

10.0

9.82

9.22

9.91

6.06

9.74

9.16

7.80

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

98

92

99

61

97

92

78

70 - 130

50 - 150

65 - 135

10 - 170

70 - 135

65 - 135

40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	82		28 - 163
4-Bromofluorobenzene (Surr)	78		41 - 122
Toluene-d8 (Surr)	83		53 - 125
Dibromofluoromethane (Surr)	99		59 - 168

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11/18/2021

Page 23 of 44

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378302/8

Matrix: Water

Analysis Batch: 378302

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/09/21 17:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/09/21 17:44	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/09/21 17:44	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/09/21 17:44	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/09/21 17:44	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/09/21 17:44	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/09/21 17:44	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/09/21 17:44	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/09/21 17:44	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/09/21 17:44	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/09/21 17:44	1
Acrolein	ND		20	16	ug/L			11/09/21 17:44	1
Acrylonitrile	ND		20	7.8	ug/L			11/09/21 17:44	1
Benzene	ND		1.0	0.60	ug/L			11/09/21 17:44	1
Bromoform	ND		1.0	0.98	ug/L			11/09/21 17:44	1
Bromomethane	ND		1.0	0.89	ug/L			11/09/21 17:44	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/09/21 17:44	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/09/21 17:44	1
Chloroform	ND		1.0	0.60	ug/L			11/09/21 17:44	1
Chloromethane	ND		1.0	0.90	ug/L			11/09/21 17:44	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/09/21 17:44	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/09/21 17:44	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/09/21 17:44	1
Tetrachloroethene	ND		1.0	0.47	ug/L			11/09/21 17:44	1
Toluene	ND		1.0	0.46	ug/L			11/09/21 17:44	1
trans-1,2-Dichloroethene	ND		1.0	0.67	ug/L			11/09/21 17:44	1
trans-1,3-Dichloropropene	ND		1.0	0.58	ug/L			11/09/21 17:44	1
Trichloroethene	ND		1.0	0.69	ug/L			11/09/21 17:44	1
Vinyl chloride	ND		1.0		ug/L			11/09/21 17:44	1
Dibromochloromethane	ND		1.0		ug/L			11/09/21 17:44	1
Bromodichloromethane	ND		1.0		ug/L			11/09/21 17:44	1
Chloroethane	ND		1.0		ug/L			11/09/21 17:44	1

Surrogate	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	142	28 - 163		11/09/21 17:44	1
4-Bromofluorobenzene (Surr)	99	41 - 122		11/09/21 17:44	1
Toluene-d8 (Surr)	102	53 - 125		11/09/21 17:44	1
Dibromofluoromethane (Surr)	132	59 - 168		11/09/21 17:44	1

Lab Sample ID: LCS 180-378302/23

Matrix: Water

Analysis Batch: 378302

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	12.8		ug/L		128	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	6.36		ug/L		64	60 - 140	
1,1,2-Trichloroethane	10.0	7.79		ug/L		78	70 - 130	
1,1-Dichloroethane	10.0	11.5		ug/L		115	70 - 130	

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Client Sample ID: Lab Control Sample

Prep Type: Total/NA

11/18/2021

Page 24 of 44

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378302/23

Matrix: Water

Analysis Batch: 378302

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1-Dichloroethene	10.0	12.9		ug/L		129	50 - 150
1,2-Dichloroethane	10.0	9.10		ug/L		91	70 - 130
1,2-Dichloropropane	10.0	9.47		ug/L		95	35 - 165
1,2-Dichlorobenzene	10.0	9.75		ug/L		98	65 - 135
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135
2-Chloroethyl vinyl ether	20.0	5.35		ug/L		27	10 - 170
Acrolein	30.0	20.5		ug/L		68	60 - 140
Acrylonitrile	100	36.6	*-	ug/L		37	60 - 140
Benzene	10.0	11.4		ug/L		114	65 - 135
Bromoform	10.0	9.91		ug/L		99	70 - 130
Bromomethane	10.0	10.1		ug/L		101	15 - 170
Carbon tetrachloride	10.0	13.9	*+	ug/L		139	70 - 130
Chlorobenzene	10.0	11.7		ug/L		117	65 - 135
Chloroform	10.0	12.9		ug/L		129	70 - 135
Chloromethane	10.0	9.02		ug/L		90	10 - 170
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	25 - 170
Ethylbenzene	10.0	11.9		ug/L		119	60 - 140
Methylene Chloride	10.0	11.8		ug/L		118	60 - 140
Tetrachloroethene	10.0	12.2		ug/L		122	70 - 130
Toluene	10.0	12.1		ug/L		121	70 - 130
trans-1,2-Dichloroethene	10.0	11.4		ug/L		114	70 - 130
trans-1,3-Dichloropropene	10.0	10.0		ug/L		100	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Vinyl chloride	10.0	10.1		ug/L		101	10 - 170
Dibromochloromethane	10.0	9.17		ug/L		92	70 - 135
Bromodichloromethane	10.0	11.6		ug/L		116	65 - 135
Chloroethane	10.0	10.8		ug/L		108	40 - 160

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		28 - 163
4-Bromofluorobenzene (Surr)	101		41 - 122
Toluene-d8 (Surr)	106		53 - 125
Dibromofluoromethane (Surr)	110		59 - 168

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-378694/5

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/12/21 09:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/12/21 09:53	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/12/21 09:53	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/12/21 09:53	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/12/21 09:53	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/12/21 09:53	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/12/21 09:53	1
1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2-Dichlorobenzene	ND ND ND ND		1.0 1.0 1.0 1.0	0.45 0.31 0.55 0.36	ug/L ug/L ug/L ug/L			11/12/21 09:53 11/12/21 09:53 11/12/21 09:53 11/12/21 09:53	1 1 1 1 1

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Page 25 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378694/5

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Method Blank

Prep Type: Total/NA

11/12/21 09:53

11/12/21 09:53

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,2-Dichloropropane ND 1.0 0.66 ug/L 11/12/21 09:53 1,3-Dichlorobenzene ND 1.0 0.50 ug/L 11/12/21 09:53 ND 1,4-Dichlorobenzene 1.0 0.54 ug/L 11/12/21 09:53 2-Chloroethyl vinyl ether ND 2.0 1.7 ug/L 11/12/21 09:53 ND 20 Acrolein 16 ug/L 11/12/21 09:53 Acrylonitrile ND 20 7.8 ug/L 11/12/21 09:53 Benzene ND 1.0 0.60 ug/L 11/12/21 09:53 0.98 ug/L **Bromoform** ND 1.0 11/12/21 09:53 11/12/21 09:53 Bromomethane ND 1.0 0.89 ug/L Carbon tetrachloride ND 1.0 0.88 ug/L 11/12/21 09:53 Chlorobenzene ND 1.0 0.50 ug/L 11/12/21 09:53 ND Dibromochloromethane 1.0 0.84 ug/L 11/12/21 09:53 Chloromethane ND 0.90 ug/L 1.0 11/12/21 09:53 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/12/21 09:53 1 Bromodichloromethane ND 1.0 0.64 ug/L 11/12/21 09:53 Chloroethane ND 1.0 0.90 ug/L 11/12/21 09:53 Ethylbenzene ND 1.0 0.51 ug/L 11/12/21 09:53 Methylene Chloride ND 1.0 0.89 ug/L 11/12/21 09:53 Tetrachloroethene ND 1.0 0.47 ug/L 11/12/21 09:53 Toluene ND 1.0 0.46 ug/L 11/12/21 09:53 0.67 ug/L trans-1,2-Dichloroethene ND 1.0 11/12/21 09:53 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/12/21 09:53 Trichloroethene ND 1.0 0.69 ug/L 11/12/21 09:53

мв мв

ND

ND

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91	41 - 122		/12/21 09:53	1
Toluene-d8 (Surr)	98	53 - 125	11	/12/21 09:53	1
1,2-Dichloroethane-d4 (Surr)	119	28 - 163	11	/12/21 09:53	1
Dibromofluoromethane (Surr)	118	59 - 168	11	/12/21 09:53	1

1.0

1.0

0.60 ug/L

0.40 ug/L

Chloroform

Vinyl chloride

Lab Sample ID: LCS 180-378694/3		Client Sample ID:	Lab Control Sample
Matrix: Water			Prep Type: Total/NA
Analysis Batch: 378694			

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	8.74		ug/L		87	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	7.84		ug/L		78	60 - 140	
1,1,2-Trichloroethane	10.0	9.00		ug/L		90	70 - 130	
1,1-Dichloroethane	10.0	9.38		ug/L		94	70 - 130	
1,1-Dichloroethene	10.0	11.5		ug/L		115	50 - 150	
1,2-Dichlorobenzene	10.0	7.32		ug/L		73	65 - 135	
1,2-Dichloroethane	10.0	9.47		ug/L		95	70 - 130	
1,2-Dichloropropane	10.0	7.81		ug/L		78	35 - 165	
1,3-Dichlorobenzene	10.0	7.92		ug/L		79	70 - 130	
1,4-Dichlorobenzene	10.0	7.58		ug/L		76	65 - 135	
2-Chloroethyl vinyl ether	20.0	5.49		ug/L		27	10 - 170	

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Page 26 of 44

10

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378694/3

Matrix: Water

Analysis Batch: 378694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acrolein	30.0	21.8		ug/L		73	60 - 140	
Acrylonitrile	100	92.4		ug/L		92	60 - 140	
Benzene	10.0	9.12		ug/L		91	65 - 135	
Bromoform	10.0	12.6		ug/L		126	70 - 130	
Bromomethane	10.0	7.85		ug/L		78	15 - 170	
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130	
Chlorobenzene	10.0	8.43		ug/L		84	65 - 135	
Dibromochloromethane	10.0	9.66		ug/L		97	70 - 135	
Chloromethane	10.0	7.23		ug/L		72	10 - 170	
cis-1,3-Dichloropropene	10.0	11.9		ug/L		119	25 - 170	
Bromodichloromethane	10.0	8.99		ug/L		90	65 - 135	
Chloroethane	10.0	8.15		ug/L		82	40 - 160	
Ethylbenzene	10.0	7.51		ug/L		75	60 - 140	
Methylene Chloride	10.0	10.6		ug/L		106	60 - 140	
Tetrachloroethene	10.0	8.34		ug/L		83	70 - 130	
Toluene	10.0	8.30		ug/L		83	70 - 130	
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	70 - 130	
trans-1,3-Dichloropropene	10.0	10.6		ug/L		106	50 - 150	
Trichloroethene	10.0	7.36		ug/L		74	65 - 135	
Chloroform	10.0	10.2		ug/L		102	70 - 135	
Vinyl chloride	10.0	8.13		ug/L		81	10 - 170	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		41 - 122
Toluene-d8 (Surr)	89		53 - 125
1,2-Dichloroethane-d4 (Surr)	120		28 - 163
Dibromofluoromethane (Surr)	96		59 - 168

Lab Sample ID: MB 180-378902/8

Matrix: Water

Analysis Batch: 378902

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/15/21 12:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/15/21 12:24	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/15/21 12:24	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/15/21 12:24	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/15/21 12:24	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/15/21 12:24	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/15/21 12:24	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/15/21 12:24	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/15/21 12:24	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/15/21 12:24	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/15/21 12:24	1
Acrolein	ND		20	16	ug/L			11/15/21 12:24	1
Acrylonitrile	ND		20	7.8	ug/L			11/15/21 12:24	1
Benzene	ND		1.0	0.60	ug/L			11/15/21 12:24	1
Bromoform	ND		1.0	0.98	ug/L			11/15/21 12:24	1

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Page 27 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-378902/8

Matrix: Water

Analysis Batch: 378902

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Bromomethane ND 1.0 0.89 ug/L 11/15/21 12:24 Carbon tetrachloride ND 1.0 88.0 ug/L 11/15/21 12:24 Chlorobenzene ND 0.50 11/15/21 12:24 1.0 ug/L Dibromochloromethane ND 1.0 0.84 ug/L 11/15/21 12:24 Chloromethane ND 1.0 0.90 ug/L 11/15/21 12:24 cis-1,3-Dichloropropene ND 1.0 0.59 ug/L 11/15/21 12:24 Bromodichloromethane ND 1.0 0.64 ug/L 11/15/21 12:24 Chloroethane ND 1.0 0.90 ug/L 11/15/21 12:24 Ethylbenzene ND 1.0 0.51 ug/L 11/15/21 12:24 Methylene Chloride ND 1.0 0.89 ug/L 11/15/21 12:24 Tetrachloroethene ND 1.0 0.47 ug/L 11/15/21 12:24 Toluene ND 0.46 ug/L 11/15/21 12:24 1.0 trans-1,2-Dichloroethene ND 1.0 0.67 ug/L 11/15/21 12:24 trans-1,3-Dichloropropene ND 1.0 0.58 ug/L 11/15/21 12:24 Trichloroethene ND 1.0 0.69 ug/L 11/15/21 12:24 ND Chloroform 10 0.60 ug/L 11/15/21 12:24 Vinyl chloride ND 1.0 0.40 ug/L 11/15/21 12:24

MB MB

	Surrogate	%Recovery	Qualifier	Limits	Prepared Analy	zed	Dil Fac
	4-Bromofluorobenzene (Surr)	90		41 - 122	11/15/21	12:24	1
	Toluene-d8 (Surr)	100		53 - 125	11/15/21	12:24	1
	1,2-Dichloroethane-d4 (Surr)	132		28 - 163	11/15/21	12:24	1
İ	Dibromofluoromethane (Surr)	123		59 - 168	11/15/21	12:24	1

Lab Sample ID: LCS 180-378902/6

Matrix: Water

Dibromochloromethane

Analysis Batch: 378902

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Added **Analyte** Result Qualifier Unit %Rec Limits 1,1,1-Trichloroethane 10.0 8.78 ug/L 88 70 - 130 10.0 107 1,1,2,2-Tetrachloroethane 10.7 ug/L 60 - 1401,1,2-Trichloroethane 10.0 ug/L 113 70 - 130 11.3 ug/L 1,1-Dichloroethane 10.0 8 44 84 70 - 130 1,1-Dichloroethene 10.0 7.70 77 50 - 150 ug/L ug/L 10.0 8.96 90 65 - 135 1,2-Dichlorobenzene 1,2-Dichloroethane 10.0 10.5 ug/L 105 70 - 130 ug/L 1,2-Dichloropropane 10.0 8.67 87 35 - 165 93 1,3-Dichlorobenzene 10.0 9.31 ug/L 70 - 130 1.4-Dichlorobenzene 10.0 8.68 ug/L 87 65 - 1352-Chloroethyl vinyl ether 20.0 5.52 ug/L 28 10 - 170 Acrolein 30.0 27.6 ug/L 92 60 - 140 101 Acrylonitrile 100 101 ug/L 60 - 140 Benzene 10.0 8.90 89 ug/L 65 - 135Bromoform 10.0 16.4 *+ ug/L 164 70 - 130Bromomethane 10.0 9.56 ug/L 96 15 - 170 Carbon tetrachloride 10.0 8.76 ug/L 88 70 - 130 Chlorobenzene 10.0 9.17 ug/L 92 65 - 135

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70 - 135

117

Page 28 of 44

11.7

ug/L

10.0

10

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378902/6

Matrix: Water

Chloroform

Vinyl chloride

Analysis Batch: 378902

Client Sample ID: Lab Control Sample

70 - 135

10 - 170

99

Prep Type: Total/NA

,, ,							
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloromethane	10.0	6.69		ug/L		67	10 - 170
cis-1,3-Dichloropropene	10.0	11.9		ug/L		119	25 - 170
Bromodichloromethane	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	8.74		ug/L		87	40 - 160
Ethylbenzene	10.0	7.87		ug/L		79	60 - 140
Methylene Chloride	10.0	9.53		ug/L		95	60 - 140
Tetrachloroethene	10.0	9.52		ug/L		95	70 - 130
Toluene	10.0	9.54		ug/L		95	70 - 130
trans-1,2-Dichloroethene	10.0	8.08		ug/L		81	70 - 130
trans-1,3-Dichloropropene	10.0	12.4		ug/L		124	50 - 150
Trichloroethene	10.0	8 40		ua/l		84	65 - 135

10.0

10.0

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		41 - 122
Toluene-d8 (Surr)	104		53 - 125
1,2-Dichloroethane-d4 (Surr)	122		28 - 163
Dibromofluoromethane (Surr)	124		59 - 168

Lab Sample ID: MB 180-379035/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA

9.86

8.54

ug/L

ug/L

Analysis Batch: 379035

-	MB I	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/16/21 13:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.60	ug/L			11/16/21 13:40	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/16/21 13:40	1
1,1-Dichloroethane	ND		1.0	0.31	ug/L			11/16/21 13:40	1
1,1-Dichloroethene	ND		1.0	0.55	ug/L			11/16/21 13:40	1
1,2-Dichlorobenzene	ND		1.0	0.36	ug/L			11/16/21 13:40	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/16/21 13:40	1
1,2-Dichloropropane	ND		1.0	0.66	ug/L			11/16/21 13:40	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			11/16/21 13:40	1
1,4-Dichlorobenzene	ND		1.0	0.54	ug/L			11/16/21 13:40	1
2-Chloroethyl vinyl ether	ND		2.0	1.7	ug/L			11/16/21 13:40	1
Acrolein	ND		20	16	ug/L			11/16/21 13:40	1
Acrylonitrile	ND		20	7.8	ug/L			11/16/21 13:40	1
Benzene	ND		1.0	0.60	ug/L			11/16/21 13:40	1
Bromoform	ND		1.0	0.98	ug/L			11/16/21 13:40	1
Bromomethane	ND		1.0	0.89	ug/L			11/16/21 13:40	1
Carbon tetrachloride	ND		1.0	0.88	ug/L			11/16/21 13:40	1
Chlorobenzene	ND		1.0	0.50	ug/L			11/16/21 13:40	1
Dibromochloromethane	ND		1.0	0.84	ug/L			11/16/21 13:40	1
Chloromethane	ND		1.0	0.90	ug/L			11/16/21 13:40	1
cis-1,3-Dichloropropene	ND		1.0	0.59	ug/L			11/16/21 13:40	1
Bromodichloromethane	ND		1.0	0.64	ug/L			11/16/21 13:40	1
Chloroethane	ND		1.0	0.90	ug/L			11/16/21 13:40	1

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Page 29 of 44

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-379035/7 Matrix: Water

Analysis Batch: 379035

Client Sample ID: Method Blank

Prep Type: Total/NA

Job ID: 180-129527-1

	MB MB							
Analyte	Result Quali	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND ND	1.0	0.51	ug/L			11/16/21 13:40	1
Methylene Chloride	ND	1.0	0.89	ug/L			11/16/21 13:40	1
Tetrachloroethene	ND	1.0	0.47	ug/L			11/16/21 13:40	1
Toluene	ND	1.0	0.46	ug/L			11/16/21 13:40	1
trans-1,2-Dichloroethene	ND	1.0	0.67	ug/L			11/16/21 13:40	1
trans-1,3-Dichloropropene	ND	1.0	0.58	ug/L			11/16/21 13:40	1
Trichloroethene	ND	1.0	0.69	ug/L			11/16/21 13:40	1
Chloroform	ND	1.0	0.60	ug/L			11/16/21 13:40	1
Vinyl chloride	ND	1.0	0.40	ug/L			11/16/21 13:40	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	86		41 - 122	_		11/16/21 13:40	1	
Toluene-d8 (Surr)	97		53 - 125			11/16/21 13:40	1	
1,2-Dichloroethane-d4 (Surr)	141		28 - 163			11/16/21 13:40	1	
Dibromofluoromethane (Surr)	139		59 - 168			11/16/21 13:40	1	

Lab Sample ID: LCS 180-379035/5

Matrix: Water

Analysis Batch: 379035

Client Sample ID: Lab Control Sample	
Prep Type: Total/NA	

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	9.74		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	8.61		ug/L		86	70 - 130
1,1-Dichloroethene	10.0	8.21		ug/L		82	50 - 150
1,2-Dichlorobenzene	10.0	9.05		ug/L		91	65 - 135
1,2-Dichloroethane	10.0	11.6		ug/L		116	70 - 130
1,2-Dichloropropane	10.0	9.31		ug/L		93	35 - 165
1,3-Dichlorobenzene	10.0	9.73		ug/L		97	70 - 130
1,4-Dichlorobenzene	10.0	9.50		ug/L		95	65 - 135
2-Chloroethyl vinyl ether	20.0	4.12		ug/L		21	10 - 170
Acrolein	30.0	24.9		ug/L		83	60 - 140
Acrylonitrile	100	96.1		ug/L		96	60 - 140
Benzene	10.0	10.0		ug/L		100	65 - 135
Bromoform	10.0	14.2	*+	ug/L		142	70 - 130
Bromomethane	10.0	9.51		ug/L		95	15 - 170
Carbon tetrachloride	10.0	10.1		ug/L		101	70 - 130
Chlorobenzene	10.0	10.3		ug/L		103	65 - 135
Dibromochloromethane	10.0	12.6		ug/L		126	70 - 135
Chloromethane	10.0	8.73		ug/L		87	10 - 170
cis-1,3-Dichloropropene	10.0	12.6		ug/L		126	25 - 170
Bromodichloromethane	10.0	11.5		ug/L		115	65 - 135
Chloroethane	10.0	9.02		ug/L		90	40 - 160
Ethylbenzene	10.0	9.14		ug/L		91	60 - 140
Methylene Chloride	10.0	9.95		ug/L		100	60 - 140
Tetrachloroethene	10.0	9.84		ug/L		98	70 - 130
Toluene	10.0	9.87		ug/L		99	70 - 130

Eurofins TestAmerica, Pittsburgh

Page 30 of 44

2

3

6

8

10

11

12

-

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-379035/5

Matrix: Water

Analysis Batch: 379035

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
trans-1,2-Dichloroethene	10.0	8.32		ug/L		83	70 - 130	
trans-1,3-Dichloropropene	10.0	12.7		ug/L		127	50 - 150	
Trichloroethene	10.0	9.18		ug/L		92	65 - 135	
Chloroform	10.0	10.5		ug/L		105	70 - 135	
Vinyl chloride	10.0	9.10		ug/L		91	10 - 170	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		41 - 122
Toluene-d8 (Surr)	104		53 - 125
1,2-Dichloroethane-d4 (Surr)	120		28 - 163
Dibromofluoromethane (Surr)	117		59 - 168

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-378109/1-A

Matrix: Water

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch: 378351	МВ	МВ						Prep Batch:	378109
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	ND		0.19	0.065	ug/L		11/08/21 13:28	11/11/21 16:31	1
Acenaphthene	ND		0.19	0.065	ug/L		11/08/21 13:28	11/11/21 16:31	1
Anthracene	ND		0.19	0.049	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzidine	ND		20	9.1	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[a]anthracene	ND		0.19	0.075	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[b]fluoranthene	ND		0.19	0.097	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[k]fluoranthene	ND		0.19	0.088	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[g,h,i]perylene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Benzo[a]pyrene	ND		0.19	0.053	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-chloroethyl)ether	ND		0.19	0.040	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-ethylhexyl) phthalate	ND		10	6.2	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Bromophenyl phenyl ether	ND		1.0	0.32	ug/L		11/08/21 13:28	11/11/21 16:31	1
Butyl benzyl phthalate	ND		1.0	0.46	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Chloro-3-methylphenol	ND		1.0	0.28	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Chloronaphthalene	ND		0.19	0.059	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Chlorophenol	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
Chrysene	ND		0.19	0.081	ug/L		11/08/21 13:28	11/11/21 16:31	1
Dibenzo(a,h)-anthracene	ND		0.19	0.072	ug/L		11/08/21 13:28	11/11/21 16:31	1
Di-n-butyl phthalate	ND		1.0	0.74	ug/L		11/08/21 13:28	11/11/21 16:31	1
3,3'-Dichlorobenzidine	ND		1.0	0.58	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dichlorophenol	ND		0.19	0.051	ug/L		11/08/21 13:28	11/11/21 16:31	1
Diethyl phthalate	ND		1.0	0.57	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dimethylphenol	ND		1.0	0.17	ug/L		11/08/21 13:28	11/11/21 16:31	1
Dimethyl phthalate	ND		1.0	0.20	ug/L		11/08/21 13:28	11/11/21 16:31	1
4,6-Dinitro-2-methylphenol	ND		5.0	1.5	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dinitrophenol	ND		10	1.5	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4-Dinitrotoluene	ND		1.0	0.35	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,6-Dinitrotoluene	ND		1.0	0.17	ug/L		11/08/21 13:28	11/11/21 16:31	1
Di-n-octyl phthalate	ND		1.0	0.69	ug/L		11/08/21 13:28	11/11/21 16:31	1
Fluoranthene	ND		0.19	0.060	ug/L		11/08/21 13:28	11/11/21 16:31	1

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Page 31 of 44

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

MB MB

Lab Sample ID: MB 180-378109/1-A

Matrix: Water

Analysis Batch: 378351

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378109

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorobenzene	ND		0.19	0.056	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorobutadiene	ND		0.19	0.069	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachlorocyclopentadiene	ND		1.0	0.50	ug/L		11/08/21 13:28	11/11/21 16:31	1
Hexachloroethane	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.085	ug/L		11/08/21 13:28	11/11/21 16:31	1
Isophorone	ND		1.0	0.19	ug/L		11/08/21 13:28	11/11/21 16:31	1
Naphthalene	ND		0.19	0.059	ug/L		11/08/21 13:28	11/11/21 16:31	1
Nitrobenzene	ND		2.0	0.50	ug/L		11/08/21 13:28	11/11/21 16:31	1
2-Nitrophenol	ND		1.0	0.19	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Nitrophenol	ND		5.0	0.94	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodimethylamine	ND		1.0	0.067	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodiphenylamine	ND		1.0	0.12	ug/L		11/08/21 13:28	11/11/21 16:31	1
N-Nitrosodi-n-propylamine	ND		0.19	0.071	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,2'-oxybis[1-chloropropane]	ND		0.19	0.058	ug/L		11/08/21 13:28	11/11/21 16:31	1
Pentachlorophenol	ND		5.0	0.85	ug/L		11/08/21 13:28	11/11/21 16:31	1
Phenanthrene	ND		0.19	0.055	ug/L		11/08/21 13:28	11/11/21 16:31	1
Phenol	ND		1.0	0.49	ug/L		11/08/21 13:28	11/11/21 16:31	1
Pyrene	ND		0.19	0.054	ug/L		11/08/21 13:28	11/11/21 16:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.13	ug/L		11/08/21 13:28	11/11/21 16:31	1
2,4,6-Trichlorophenol	ND		1.0	0.22	ug/L		11/08/21 13:28	11/11/21 16:31	1
Bis(2-chloroethoxy)methane	ND		1.0	0.15	ug/L		11/08/21 13:28	11/11/21 16:31	1
4-Chlorophenyl phenyl ether	ND		1.0	0.22	ug/L		11/08/21 13:28	11/11/21 16:31	1
1,2-Diphenylhydrazine(as	ND		1.0	0.20	ug/L		11/08/21 13:28	11/11/21 16:31	1

Surrogate	%Recovery C	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	67		47 - 107	11/08/21 13:28	11/11/21 16:31	1
2-Fluorophenol	75		35 - 109	11/08/21 13:28	11/11/21 16:31	1
2,4,6-Tribromophenol	58		32 - 127	11/08/21 13:28	11/11/21 16:31	1
Nitrobenzene-d5	71		47 - 110	11/08/21 13:28	11/11/21 16:31	1
Phenol-d5	81		37 - 110	11/08/21 13:28	11/11/21 16:31	1
Terphenyl-d14	83		32 - 115	11/08/21 13:28	11/11/21 16:31	1

Lab Sample ID: LCS 180-378109/2-A

Matrix: Water

Azobenzene)

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Batch: 378109

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 10.0 6.95 70 Acenaphthylene ug/L 33 - 145 ug/L Acenaphthene 10.0 6.72 67 47 - 145 Anthracene 10.0 8.07 81 ug/L 27 - 133 Benzidine 10.0 ND ug/L 14 5 - 100 33 - 143 10.0 76 Benzo[a]anthracene 7.64 ug/L Benzo[b]fluoranthene 10.0 5.28 ug/L 53 24 - 150 Benzo[k]fluoranthene 10.0 5.84 ug/L 58 11 - 150 Benzo[g,h,i]perylene 10.0 ug/L 59 5.88 10 - 150 Benzo[a]pyrene 10.0 ug/L 56 17 - 150 5.62 74 12 - 150 Bis(2-chloroethyl)ether 10.0 7.37 ug/L

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Page 32 of 44

Prep Type: Total/NA

Client: ARCADIS U.S., Inc.

Job ID: 180-129527-1

Spike

LCS LCS

Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sam	ple ID:	LCS 18	80-378 1	109/2-A
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Matrix: Water

Surrogate

2-Fluorobiphenyl

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 378109 %Rec.

Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits
Bis(2-ethylhexyl) phthalate	10.0	7.69	J	ug/L		10 - 150
4-Bromophenyl phenyl ether	10.0	6.79		ug/L	68	53 - 127
Butyl benzyl phthalate	10.0	7.86		ug/L	79	10 - 150
4-Chloro-3-methylphenol	10.0	7.71		ug/L	77	22 - 147
2-Chloronaphthalene	10.0	6.57		ug/L	66	60 - 120
2-Chlorophenol	10.0	7.59		ug/L	76	23 - 134
Chrysene	10.0	7.89		ug/L	79	17 - 150
Dibenzo(a,h)-anthracene	10.0	5.80		ug/L	58	10 - 150
Di-n-butyl phthalate	10.0	8.13		ug/L	81	10 - 120
3,3'-Dichlorobenzidine	10.0	6.06		ug/L	61	10 - 150
2,4-Dichlorophenol	10.0	7.05		ug/L	71	39 - 135
Diethyl phthalate	10.0	7.02		ug/L	70	10 - 120
2,4-Dimethylphenol	10.0	7.22		ug/L	72	32 - 120
Dimethyl phthalate	10.0	7.13		ug/L	71	10 - 120
I,6-Dinitro-2-methylphenol	20.0	12.9		ug/L	65	10 - 150
2,4-Dinitrophenol	20.0	9.14	J	ug/L	46	10 - 150
2,4-Dinitrotoluene	10.0	7.49	•	ug/L	75	39 - 139
2,6-Dinitrotoluene	10.0	7.42		ug/L	74	50 - 150
Di-n-octyl phthalate	10.0	5.34		ug/L	53	10 - 146
Fluoranthene	10.0	7.89		ug/L	79	26 - 137
luorene	10.0	7.13		ug/L	71	59 - 121
Hexachlorobenzene	10.0	6.41		ug/L	64	10 - 150
dexachlorobutadiene	10.0	6.17		ug/L ug/L	62	24 - 120
Hexachlorocyclopentadiene	10.0	5.59		ug/L	56	37 - 121
dexactionocyclopertadiene dexactionocyclopertadiene	10.0	7.98			80	40 - 120
	10.0	7.96 5.76		ug/L	58	10 - 150
ndeno[1,2,3-cd]pyrene				ug/L		
sophorone	10.0 10.0	7.21		ug/L	72	21 - 150
Naphthalene		6.98		ug/L	70	21 - 133
Vitrobenzene	10.0	7.19		ug/L	72	35 - 150
2-Nitrophenol	10.0	7.06		ug/L	71	29 - 150
-Nitrophenol	20.0	15.1		ug/L	76	10 - 132
N-Nitrosodimethylamine	10.0	7.34		ug/L	73	33 - 130
I-Nitrosodiphenylamine	10.0	7.14		ug/L	71	51 - 100
I-Nitrosodi-n-propylamine	10.0	8.18		ug/L	82	10 - 150
2,2'-oxybis[1-chloropropane]	10.0	6.54		ug/L	65	36 - 150
Pentachlorophenol	20.0	13.0		ug/L	65	14 - 150
Phenanthrene	10.0	7.92		ug/L	79	54 - 120
Phenol	10.0	7.60		ug/L	76	10 - 120
Pyrene	10.0	7.80		ug/L	78	52 - 120
,2,4-Trichlorobenzene	10.0	6.59		ug/L	66	44 - 142
2,4,6-Trichlorophenol	10.0	6.63		ug/L	66	37 - 144
Bis(2-chloroethoxy)methane	10.0	6.96		ug/L	70	33 - 150
4-Chlorophenyl phenyl ether	10.0	6.49		ug/L	65	25 - 150
1,2-Diphenylhydrazine(as	10.0	8.06		ug/L	81	43 - 105
Azobenzene)						

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Page 33 of 44

Limits

47 - 107

%Recovery Qualifier

68

6

8

10

12

1.

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-378109/2-A

Matrix: Water

Analysis Batch: 378351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 378109

	LCS	LCS LCS				
Surrogate	%Recovery	Qualifier	Limits			
2-Fluorophenol	80		35 - 109			
2,4,6-Tribromophenol	69		32 - 127			
Nitrobenzene-d5	77		47 - 110			
Phenol-d5	82		37 - 110			

73

Sample Sample

Lab Sample ID: 180-129527-1 MS

Matrix: Water

Terphenyl-d14

Analysis Batch: 378351

Client Sample ID: POTW OUTFALL(110221)

Prep Type: Total/NA

Prep Batch: 378109

MS MS

32 - 115

Spike

10

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene	ND		10.0	5.19		ug/L		52	35 - 145	
Acenaphthene	ND		10.0	5.03		ug/L		50	47 - 145	
Anthracene	ND		10.0	5.96		ug/L		60	27 - 133	
Benzidine	ND	F1	10.0	ND	F1	ug/L		0	5 - 100	
Benzo[a]anthracene	ND		10.0	6.07		ug/L		61	33 - 143	
Benzo[b]fluoranthene	ND		10.0	4.11		ug/L		41	24 - 159	
Benzo[k]fluoranthene	ND		10.0	4.42		ug/L		44	11 - 162	
Benzo[g,h,i]perylene	ND		10.0	4.67		ug/L		47	10 - 170	
Benzo[a]pyrene	ND		10.0	4.37		ug/L		44	17 - 163	
Bis(2-chloroethyl)ether	ND		10.0	5.28		ug/L		53	12 - 158	
Bis(2-ethylhexyl) phthalate	ND		10.0	7.45	J	ug/L		75	10 - 158	
4-Bromophenyl phenyl ether	ND		10.0	5.38		ug/L		54	53 - 127	
Butyl benzyl phthalate	ND		10.0	6.44		ug/L		64	10 - 152	
4-Chloro-3-methylphenol	ND		10.0	5.31		ug/L		53	22 - 147	
2-Chloronaphthalene	ND	F1	10.0	5.19	F1	ug/L		52	60 - 120	
2-Chlorophenol	ND		10.0	4.90		ug/L		49	23 - 134	
Chrysene	ND		10.0	6.16		ug/L		62	17 - 168	
Dibenzo(a,h)-anthracene	ND		10.0	4.53		ug/L		45	10 - 170	
Di-n-butyl phthalate	0.78	J	10.0	6.99		ug/L		62	10 - 120	
3,3'-Dichlorobenzidine	ND		10.0	4.50		ug/L		45	10 - 170	
2,4-Dichlorophenol	ND		10.0	4.88		ug/L		49	39 - 135	
Diethyl phthalate	ND		10.0	4.88		ug/L		49	10 - 120	
2,4-Dimethylphenol	ND		10.0	4.94		ug/L		49	32 - 120	
Dimethyl phthalate	ND		10.0	4.88		ug/L		49	10 - 120	
4,6-Dinitro-2-methylphenol	ND		20.0	9.69		ug/L		48	10 - 170	
2,4-Dinitrophenol	ND		20.0	8.03	J	ug/L		40	10 - 170	
2,4-Dinitrotoluene	ND		10.0	5.03		ug/L		50	39 - 139	
2,6-Dinitrotoluene	ND		10.0	4.98		ug/L		50	50 - 158	
Di-n-octyl phthalate	ND		10.0	4.69		ug/L		47	10 - 146	
Fluoranthene	ND		10.0	5.90		ug/L		59	26 - 137	
Fluorene	ND	F1	10.0	5.37	F1	ug/L		54	59 - 121	
Hexachlorobenzene	ND		10.0	5.16		ug/L		52	10 - 152	
Hexachlorobutadiene	ND		10.0	5.08		ug/L		51	24 - 120	
Hexachlorocyclopentadiene	ND	F1	10.0	3.97	F1	ug/L		40	41 - 106	
Hexachloroethane	ND		10.0	6.42		ug/L		64	40 - 120	
Indeno[1,2,3-cd]pyrene	ND		10.0	4.55		ug/L		45	10 - 170	
Isophorone	ND		10.0	5.35		ug/L		53	21 - 170	

Sample Sample

ND

Job ID: 180-129527-1 Project/Site: Cytec Havre de Grace MD

MS MS

5.74

4.81

7.69

5.95

4.97

5.88

5.26

4.40

5.12

5.05

5.92

ug/L

Method: EPA 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-129527-1 MS

Matrix: Water

Analysis Batch: 378351

N-Nitrosodi-n-propylamine

Pentachlorophenol

1,2,4-Trichlorobenzene

Bis(2-chloroethoxy)methane

4-Chlorophenyl phenyl ether

1,2-Diphenylhydrazine(as

2,4,6-Trichlorophenol

Phenanthrene

Phenol

Pyrene

2,2'-oxybis[1-chloropropane]

Client Sample ID: POTW OUTFALL(110221)

Prep Type: Total/NA

Prep Batch: 378109 %Rec.

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Naphthalene	ND		10.0	5.56		ug/L		56	21 - 133	
Nitrobenzene	ND		10.0	5.28		ug/L		53	35 - 170	
2-Nitrophenol	ND		10.0	4.75		ug/L		48	29 - 170	
4-Nitrophenol	ND		20.0	9.61		ug/L		48	10 - 132	
N-Nitrosodimethylamine	ND		10.0	5.22		ug/L		52	48 - 109	
N-Nitrosodiphenylamine	ND	F1	10.0	4.99	F1	ug/L		50	56 - 100	

10.0

10.0

20.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

10.0

Spike

50 56 - 100 57 10 - 170 48 36 - 166 38 17 - 170

60 54 - 120

50 10 - 120 59 52 - 120 53 44 - 142

44 37 - 144 51 33 - 170 50 25 - 158

46 - 103

59

Azobenzene)

MS MS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	54		47 - 107
2-Fluorophenol	53		35 - 109
2,4,6-Tribromophenol	47		32 - 127
Nitrobenzene-d5	54		47 - 110
Phenol-d5	56		37 - 110
Terphenyl-d14	60		32 - 115

Method: EPA 200.7 Rev 4 - Metals (ICP)

Lab Sample ID: MB 180-377852/1-A

Matrix: Water

Analysis Batch: 378321

Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 377852

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		10	5.7	ug/L		11/08/21 11:30	11/09/21 23:42	1
Cadmium	ND		5.0	0.33	ug/L		11/08/21 11:30	11/09/21 23:42	1
Chromium	ND		5.0	2.6	ug/L		11/08/21 11:30	11/09/21 23:42	1
Copper	ND		25	3.9	ug/L		11/08/21 11:30	11/09/21 23:42	1
Lead	ND		10	2.3	ug/L		11/08/21 11:30	11/09/21 23:42	1
Nickel	ND		40	2.1	ug/L		11/08/21 11:30	11/09/21 23:42	1
Silver	ND		5.0	0.87	ug/L		11/08/21 11:30	11/09/21 23:42	1
Zinc	ND		20	3.3	ug/L		11/08/21 11:30	11/09/21 23:42	1

Lab Sample ID: LCS 180-377852/2-A

Matrix: Water

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 377852 %Rec.

Analysis Batch: 378321 LCS LCS Spike Analyte Added Result Qualifier Unit Limits %Rec Arsenic 1000 1040 85 - 115 104 ug/L

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Page 35 of 44

Project/Site: Cytec Havre de Grace MD

Method: EPA 200.7 Rev 4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-377852/2-A **Matrix: Water**

Analysis Batch: 378321

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Prep Batch: 377852

Prep Type: Total/NA

Prep Batch: 377755

10

Job ID: 180-129527-1

Alialysis Batcii. 376321	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cadmium	500	503		ug/L		101	85 - 115
Chromium	500	478		ug/L		96	85 - 115
Copper	500	489		ug/L		98	85 - 115
Lead	500	482		ug/L		96	85 - 115
Nickel	500	487		ug/L		97	85 - 115
Silver	250	246		ug/L		98	85 - 115
Zinc	250	245		ug/L		98	85 - 115
-							

Method: EPA 245.1 Rev. - Mercury (CVAA)

Lab Sample ID: MB 180-377755/1-A **Client Sample ID: Method Blank**

Matrix: Water

Analysis Batch: 378250

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 0.20 11/05/21 08:16 11/09/21 10:16 Mercury 0.13 ug/L

Lab Sample ID: LCS 180-377755/2-A

Matrix: Water

Analyte

Mercury

Analysis Batch: 378250

Spike Added 2.50 Prep Type: Total/NA Prep Batch: 377755

%Rec

100

%Rec.

Limits 85 - 115

Client Sample ID: Lab Control Sample

Method: SM 4500CN E - Total Cyanide

Lab Sample ID: MB 180-378062/4-A

Matrix: Water

Cyanide, Total

Analysis Batch: 378187

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 378062

MB MB Analyte

Result Qualifier MDL Unit Prepared Analyzed Dil Fac ND ^+ 0.010 0.0080 mg/L 11/08/21 11:30 11/08/21 14:34

LCS LCS

2.49

Result Qualifier

Unit

ug/L

Lab Sample ID: HLCS 180-378062/2-A

Matrix: Water

Analysis Batch: 378187

Analysis Batch: 378187

Client Sample ID: Lab Control Sample Prep Type: Total/NA

90 - 110

104

Prep Batch: 378062

HLCS HLCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits

Cyanide, Total 0.250 0.260 ^+ mg/L

Lab Sample ID: LCS 180-378062/3-A

Matrix: Water

Client Sample ID: Lab Control Sample Prep Type: Total/NA **Prep Batch: 378062**

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 0.200 0.204 ^+ 90 - 110 Cyanide, Total mg/L 102

Eurofins TestAmerica, Pittsburgh

Job ID: 180-129527-1 Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: SM 4500CN E - Total Cyanide (Continued)

Lab Sample ID: LLCS 180-378062/1-A **Matrix: Water**

Analysis Batch: 378187

Analyte Cyanide, Total

Spike Added 0.0500

LLCS LLCS 0.0519 ^+

Result Qualifier Unit

mg/L

D %Rec 104

Limits 90 - 110

%Rec.

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 378062

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 377745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-3	EW-1 (110221)	Total/NA	Water	EPA 624	
180-129527-4	EW-2 (110221)	Total/NA	Water	EPA 624	
180-129527-5	MW-10D(110221)	Total/NA	Water	EPA 624	
180-129527-6	EFFLUENT (110221)	Total/NA	Water	EPA 624	
180-129527-7	TRIP BLANK	Total/NA	Water	EPA 624	
MB 180-377745/9	Method Blank	Total/NA	Water	EPA 624	
LCS 180-377745/4	Lab Control Sample	Total/NA	Water	EPA 624	
LCSD 180-377745/6	Lab Control Sample Dup	Total/NA	Water	EPA 624	

Analysis Batch: 377976

Lab Sample ID 180-129527-3 - DL	Client Sample ID EW-1 (110221)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-377976/6	Method Blank	Total/NA	Water	EPA 624	
LCS 180-377976/3	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-4 - DL	EW-2 (110221)	Total/NA	Water	EPA 624	
180-129527-6 - DL	EFFLUENT (110221)	Total/NA	Water	EPA 624	
MB 180-378019/8	Method Blank	Total/NA	Water	EPA 624	
LCS 180-378019/5	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378302

Lab Sample ID 180-129527-5 - DL	Client Sample ID MW-10D(110221)	Prep Type Total/NA	Matrix Water	Method EPA 624	Prep Batch
MB 180-378302/8	Method Blank	Total/NA	Water	EPA 624	
LCS 180-378302/23	Lab Control Sample	Total/NA	Water	EPA 624	

Analysis Batch: 378694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	EPA 624.1	
180-129527-2	TRIP BLANK	Total/NA	Water	EPA 624.1	
MB 180-378694/5	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-378694/3	Lab Control Sample	Total/NA	Water	EPA 624.1	

Analysis Batch: 378902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-2 - RA	TRIP BLANK	Total/NA	Water	EPA 624.1	
MB 180-378902/8	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-378902/6	Lab Control Sample	Total/NA	Water	FPA 624 1	

Analysis Batch: 379035

Lab Sample ID 180-129527-1 - DL	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method EPA 624.1	Prep Batch
MB 180-379035/7	Method Blank	Total/NA	Water	EPA 624.1	
LCS 180-379035/5	Lab Control Sample	Total/NA	Water	EPA 624.1	

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11/18/2021

Page 38 of 44

5

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15

13

QC Association Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

GC/MS Semi VOA

Prep Batch: 378109

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method 625	Prep Batch
MB 180-378109/1-A	Method Blank	Total/NA	Water	625	
LCS 180-378109/2-A	Lab Control Sample	Total/NA	Water	625	
180-129527-1 MS	POTW OUTFALL(110221)	Total/NA	Water	625	

Analysis Batch: 378351

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method EPA 625.1	Prep Batch 378109
MB 180-378109/1-A	Method Blank	Total/NA	Water	EPA 625.1	378109
LCS 180-378109/2-A	Lab Control Sample	Total/NA	Water	EPA 625.1	378109
180-129527-1 MS	POTW OUTFALL(110221)	Total/NA	Water	EPA 625.1	378109

Metals

Prep Batch: 377755

Lab Sample ID 180-129527-1	Client Sample ID POTW OUTFALL(110221)	Prep Type Total/NA	Matrix Water	Method 245.1	Prep Batch
MB 180-377755/1-A	Method Blank	Total/NA	Water	245.1	
LCS 180-377755/2-A	Lab Control Sample	Total/NA	Water	245.1	

Prep Batch: 377852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total Recoverable	Water	200.7	
MB 180-377852/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 180-377852/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 378250

Lab Sample ID 180-129527-1	<u> </u>		Matrix Water	Method EPA 245.1 Rev.	Prep Batch 377755
MB 180-377755/1-A	Method Blank	Total/NA	Water	EPA 245.1 Rev.	377755
LCS 180-377755/2-A	Lab Control Sample	Total/NA	Water	EPA 245.1 Rev.	377755

Analysis Batch: 378321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total Recoverable	Water	EPA 200.7 Rev 4	377852
MB 180-377852/1-A	Method Blank	Total Recoverable	Water	EPA 200.7 Rev 4	377852
LCS 180-377852/2-A	Lab Control Sample	Total Recoverable	Water	EPA 200.7 Rev 4	377852

General Chemistry

Prep Batch: 378062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	SM 4500 CN C		
MB 180-378062/4-A	Method Blank	Total/NA	Water	SM 4500 CN C		
HLCS 180-378062/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C		
LCS 180-378062/3-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C		
LLCS 180-378062/1-A	Lab Control Sample	Total/NA	Water	SM 4500 CN C		

Analysis Batch: 378187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129527-1	POTW OUTFALL(110221)	Total/NA	Water	SM 4500CN E	378062
MB 180-378062/4-A	Method Blank	Total/NA	Water	SM 4500CN E	378062

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Job ID: 180-129527-1

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QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129527-1

Project/Site: Cytec Havre de Grace MD

General Chemistry (Continued)

Analysis Batch: 378187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
HLCS 180-378062/2-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062	
LCS 180-378062/3-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062	
LLCS 180-378062/1-A	Lab Control Sample	Total/NA	Water	SM 4500CN E	378062	

Chain of Custody Record

Baltimore #201

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Environment Testing America

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nover	TAT Requested (da	ays):				oletiles	3 5						B - NaOH C - Zn Acetate	N - None O - AsNaO2	
te, Zip:						4	13.1						D - Nitric Acid	P - Na2O4S	
D, 21076	Compliance Project	ct: A Yes	ΔNo			0	ranie Litra						E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3	
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ail: wetha.sridharan@arcadis.com	WO#:				is s	Sen	20				11		I - Ice J - DI Water	U - Acetone V - MCAA	
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tec Havre de Grace MD	18017987 SSOW#:					7 3	3 3				-	container	Other:		
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mple Identification	Sample Date	Sample Time	(C=comp,	O=waste/oil, BT=Tissue, A=Air)	e e	80	4500					Cota	Special	Instructions/N	lote:
mple toteramound	Sumple Suite			tion Code:	XX	DN	A					×	Special Control of the Control of th		
Mi POTW Outfoll (110221) Trip Blowk	11/2/21	1430	G	W	MM	12	13								
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									++	18	0-12952	7 Chain of	Custody		
						_			++	+	11				
					Ш		\vdash		$\bot\bot$	44	+		1		
	1 +									,					
ssible Hazard Identification					Sam				y be ass	essed if	samples	s are retair	ned longer than	1 month)	
Non-Hazard Flammable Skin Irritant Po	oison B Unkn	own 💾	Radiological				n To Cliei			oosal By	Lab	☐ Arc	hive For	Months	
iverable Requested: I, II, III, IV, Other (specify)					Spec	ial Instr	ructions/C	QC Requ	irements:						
pty Kit Relinquished by:		Date:			Time:					Method	of Shipme				
nquished by: David Kramer	Date/Time:	1605	3	Arcod	-Z F	eceived	Man.	/			Date/T	10/0/	16-06	Company	(A
inquished by:	Date/Time:			Company	7 / F	eceived	by:				Date/T		- 3	Company	port
A	Date/Time:	171	w	Company	2018		V	W	1.5	Ipy		1-4	- 01		M
nquished by:	Date/Time:			Company	F	leceived I	by:				Date/T	ime:	10 45	Company	
													•		
Custody Seals Intact: Custody Seal No.:					Ic	ooler Ter	mperature(s	s) °C and C	Other Rema	irks:					

Pittsburgh, PA 15238

Chain of Custody Record

Baltimore #201

neurofins

Environment Testing America

Phone: 412-963-7058 Fax: 412-963-2468									π20			
Client Information	Sampler: D.Kron	werk	A.Feil	Lab F Colu	PM: ussy, J	Jill L			Carrier Tracki		COC No: 180-72855-1	14121.2
Client Contact: Ms. Shwetha Sridharan	Phone:443 -	936	-907	29 E-Ma		y@Eı	urofinset.co	om	State of Origin	"MO	Page: Page 2-ef 2	10ft 20f2
Company: ARCADIS U.S., Inc.		f	PWSID:					Analysis R	equested		Job #:	
Address: 7550 Teague Road Suite 210	Due Date Requested:										Preservation	
City: Hanover	TAT Requested (days):	j:									A - HCL B - NaOH C - Zn Acetate	M - Hexane N - None O - AsNaO2
State, Zip: MD, 21076	Compliance Project:	Δ Yes	Δ No		-	5					D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
Phone: 302-897-8993(Tel)	PO#: 30005455.0002.				2	3	77		57		F - MeOH G - Amchlor H - Ascorbic A	R - Na2S2O3 S - H2SO4 cid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO#:				N IO	7 Hd	9				I - Ice	U - Acetone V - MCAA
Project Name: Cytec Havre de Grace MD	Project #: 18017987				ple (Yes or No	I D	EPAG			die	K - EDTA L - EDA Other:	W - pH 4-5 Z - other (specify)
Site:	SSOW#:				Sampl	0	. 24					
Sample Identification		Sample		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered	1000	13			Total Number	and and and and and and and and and and	al Instructions/Note:
EW-1(10221)	11000117	2115	10	ation Code:		A	1//					Y
EW-1 (110221) EW-2 (110221)		345	G	W	11/1	13	3					
201-1100 (1102 2 i)	11/2/21 13		6		10 10	_	3					
MW100 (110221) Effluent (110221)	11/2/21 1	355	G	W	MA	13	-		+++	+ + +		-
Trip Blowk	111/2/21	~			NA A	15	2					
ILIB BIONK		- +			VYIV	15	-					
		\rightarrow			+	+		+++				
					+	+				++++		
				11	H							
					11				-			
4												
Possible Hazard Identification Non-Hazard Flammable Skin Irritant	Poison B Unknown		. Cataola et		Si	ample	Disposal	(A fee may b	e ssessed if s Disposal By L	samples are retai		
Deliverable Requested: I, II, III, IV, Other (specify)	Poison B Unknown	Ra	adiological					ns/QC Requiren	nents:	ab Arci	hive For	Months
Empty Kit Relinquished by:	Date	te:			Time	:			Method	of Shipment:		
Relinquished by: David Kramcr	Date/Time:		ľ	Company	14	Rece	eived by			Date/Time:	1 16201	1) Elg Solt
Relinquished by:	Date/Time:	190	u	Company F/9	, 1	Rece	eived by.	Wate	(עד	Date/Time:	-21	Company
Relinquished by:	Date/Time:			Company	20 1)	Rece	eived by:			Date/Time:	1045	Company
Custody Seals Intact: Custody Seal No.:		191				Coole	er Temperat	ure(s) "C and Other	r Remarks:			

Part # 156297-435 RRDW2 EXT 08/22 7750.9854 4890 h UNITED STATES US

SAMPLE RECEIVING

TEST AMERICA PITTSBURGH 301 ALPHA DR RIDC PARK PITTSBURGH PA 15238 2) 963-7058 REF, ARCADIS CYTEC Uncorrected temp PT-WI-SR-001 effective 11/8/18 Thermometer ID (410) 869-0085 lift using this Initials WED PRIORITY 03 NOV PA-US OVERNI 11: PI 56DJ1/A\$22/FE4A

Page 43 of 44

Client: ARCADIS U.S., Inc.

Job Number: 180-129527-1

Login Number: 129527 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Greator. Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix D

Groundwater Laboratory Analytical Reports



ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast

7979 Innovation Park Dr. Baton Rouge, LA 70820 (225) 769-4900

Report Date 09/28/2021

Report # 221091833



Project 30075892.02 Cytec

Samples Collected 9/14/21 - 9/15/21

Deliver To

Tina Armstrong Arcadis 7550 Teague Road Suite 210 Hanover, MD 21076 410-923-7807

Additional Recipients

Shwetha Sridharan, Arcadis









Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND Indicates the result was Not Detected at the specified reporting limit

NO Indicates the sample did not ignite when preliminary test performed for EPA Method 1030

DO Indicates the result was Diluted Out

MI Indicates the result was subject to Matrix Interference
TNTC Indicates the result was Too Numerous To Count
SUBC Indicates the analysis was Sub-Contracted
FLD Indicates the analysis was performed in the Field

DL Detection Limit
LOD Limit of Detection
LOQ Limit of Quantitation
RE Re-analysis

CF HPLC or GC Confirmation

00:01 Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I Indicates the result is between the MDL and LOQ

J DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria

U Indicates the compound was analyzed for but not detected
 B or V Indicates the analyte was detected in the associated Method Blank

Q Indicates a non-compliant QC Result (See Q Flag Application Report)

* Indicates a non-compliant or not applicable QC recovery or RPD – see narrative

E Organics - The result is estimated because it exceeded the instrument calibration range

Metals - % diference for the serial dilution is > 10%
 Reporting Limits adjusted to meet risk-based limit.

P RPD between primary and confirmation result is greater than 40

DL Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature

Pace Gulf Coast Report 221091833



Project ID: 30075892.02 Cytec

Certifications

Report Date: 09/28/2021

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Case Narrative

Client: Arcadis Greenville Report: 221091833

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).



Project ID: 30075892.02 Cytec

Report Date: 09/28/2021

Sample Summary

Lab ID	Client ID	Matrix	Collect Date	Receive Date
22109183301	MW3 (091421)	Water	9/14/21 11:45	9/16/21 12:00
22109183302	MW16 (091421)	Water	9/14/21 13:50	9/16/21 12:00
22109183303	DUP02 (091421)	Water	9/14/21 13:00	9/16/21 12:00
22109183304	MW14I (091521)	Water	9/15/21 07:50	9/16/21 12:00
22109183305	MW23 (091521) 40	Water	9/15/21 08:30	9/16/21 12:00
22109183306	MW23 (091521)47	Water	9/15/21 08:40	9/16/21 12:00
22109183307	MW27 (091521)	Water	9/15/21 10:15	9/16/21 12:00
22109183308	MW20D1 (091521)	Water	9/15/21 09:10	9/16/21 12:00
22109183309	MW18 (091521)24	Water	9/15/21 09:30	9/16/21 12:00
22109183310	MW18 (091521)31	Water	9/15/21 09:40	9/16/21 12:00
22109183311	TRIP BLANK	Water	9/14/21 00:01	9/16/21 12:00



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Detect Summary

Results and Detection Limits are adjusted for dilution and moisture when applicable

	AM20GAX								
Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist			
22109183301	MW3 (091421)	Ethane	ug/L	1.5	1	NA			
22109183301	MW3 (091421)	Ethene	ug/L	20	1	NA			
22109183301	MW3 (091421)	Methane	ug/L	53	1	NA			
22109183302	MW16 (091421)	Ethane	ug/L	7.8	1	NA			
22109183302	MW16 (091421)	Ethene	ug/L	1.0	1	NA			
22109183302	MW16 (091421)	Methane	ug/L	74	1	NA			
22109183303	DUP02 (091421)	Ethane	ug/L	1.8	1	NA			
22109183303	DUP02 (091421)	Ethene	ug/L	32	1	NA			
22109183303	DUP02 (091421)	Methane	ug/L	59	1	NA			
22109183304	MW14I (091521)	Ethane	ug/L	0.48J	1	NA			
22109183304	MW14I (091521)	Methane	ug/L	72	1	NA			
22109183305	MW23 (091521) 40	Ethane	ug/L	0.52J	1	NA			
22109183305	MW23 (091521) 40	Ethene	ug/L	0.26J	1	NA			
22109183305	MW23 (091521) 40	Methane	ug/L	8.4	1	NA			
22109183306	MW23 (091521)47	Ethane	ug/L	0.85J	1	NA			
22109183306	MW23 (091521)47	Methane	ug/L	11	1	NA			
22109183307	MW27 (091521)	Ethane	ug/L	0.45J	1	NA			
22109183307	MW27 (091521)	Ethene	ug/L	760	1	NA			
22109183307	MW27 (091521)	Methane	ug/L	75	1	NA			
22109183308	MW20D1 (091521)	Ethene	ug/L	0.35J	1	NA			
22109183308	MW20D1 (091521)	Methane	ug/L	120	1	NA			
22109183309	MW18 (091521)24	Methane	ug/L	2.8J	1	NA			
22109183310	MW18 (091521)31	Methane	ug/L	2.9J	1	NA			
22109183311	TRIP BLANK	Methane	ug/L	2.0J	1	NA			



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW3 (091421) Collect Date 09/14/2021 11:45 Lab ID 22109183301

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:07	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			1.5	0.17	1.0	ug/L
74-85-1	Ethene			20	0.24	1.0	ug/L
74-82-8	Methane			53	2.0	5.0	ug/L

MW16 (091421) Collect Date 09/14/2021 13:50 Lab ID 22109183302

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:18	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			7.8	0.17	1.0	ug/L
74-85-1	Ethene			1.0	0.24	1.0	ug/L
74-82-8	Methane			74	2.0	5.0	ug/L

DUD02 (004 424)	Collect Date	09/14/2021 13:00	Lab ID	22109183303
DUP02 (091421)	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:29	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			1.8	0.17	1.0	ug/L
74-85-1	Ethene			32	0.24	1.0	ug/L
74-82-8	Methane			59	2.0	5.0	ug/L

M/M/4 /1 (004 F 24)	Collect Date	09/15/2021 07:50	Lab ID	22109183304
MW14I (091521)	Receive Date	09/16/2021 12:00	Matrix	Water

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:40	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.48J	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW14I (091521) Collect Date 09/15/2021 07:50 Lab ID 22109183304

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:40	721853	AWE	
CAS# 74-82-8	Parameter Methane			Result 72	DL 2.0	LOQ 5.0	Units ug/L

MW23 (091521) 40 Collect Date 09/15/2021 08:30 Lab ID 22109183305

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:52	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.52J	0.17	1.0	ug/L
74-85-1	Ethene			0.26J	0.24	1.0	ug/L
74-82-8	Methane			8.4	2.0	5.0	ug/L

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Dilution Run Date		Analyst	%Moisture
NA	NA	NA	1 09/27/21 19:		721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.85J	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			11	2.0	5.0	ug/L

MW27 (091521) Collect Date 09/15/2021 10:15 Lab ID 22109183307

Receive Date 09/16/2021 12:00 Matrix Water

Prep Date	Prep Batch	Prep Method	Dilution	Dilution Run Date		Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 19:15		AWE	
CAS#	Parameter			Result	Result DL		Units
74-84-0	Ethane			0.45J	0.17	1.0	ug/L
74-85-1	Ethene			760	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW27 (091521) Collect Date 09/15/2021 10:15 Lab ID 22109183307

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 19:15		AWE	
CAS# 74-82-8	Parameter Methane			Result 75	DL 2.0	LOQ 5.0	Units ug/L

MW20D4 (004524)	Collect Date	09/15/2021 09:10	Lab ID	22109183308
MW20D1 (091521)	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 19:26		721853 AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.35J	0.24	1.0	ug/L
74-82-8	Methane			120	2.0	5.0	ug/L

MW49 (004524\24	Collect Date	09/15/2021 09:30	Lab ID	22109183309
MW18 (091521)24	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 19:37		721853 AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			2.8J	2.0	5.0	ug/L

M\\\\19 (001521\\21	Collect Date	09/15/2021 09:40	Lab ID 22109183310		
MW18 (091521)31	Receive Date	09/16/2021 12:00	Matrix	Water	

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:49	721853	AWE	-
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 19:49		AWE	
CAS# 74-82-8	Parameter Methane			Result 2.9J	DL 2.0	LOQ 5.0	Units ug/L

 TRIP BLANK
 Collect Date
 09/14/2021 00:01
 Lab ID
 22109183311

 Receive Date
 09/16/2021 12:00
 Matrix
 Water

Prep Date	Prep Batch	Prep Method	Dilution	Dilution Run Date		Analyst	%Moisture
NA	NA	NA	1	1 09/27/21 20:00		721853 AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			2.0J	2.0	5.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

General Chromatography QC Summary

Analytical Batch	•			LCS721	853			LCSD721853					
721853	Lab ID	2243360		2243361				2243362					
	Sample Type	MB				LCS				LCSD			
Prep Date NA			NA				NA						
	Analysis Date	09/27/21 16:49	9/27/21 16:49			09/27/21 14:55				09/27/21 16:09			
	Matrix	Water				Water				Water			
AM20GAX		Units	ug/L	Spike	Result	0/. D	Control	Spike	Result	0/. D	DDD	RPD	
AWIZUGAX		Result	DL	Added	Result	70 K	Limits%R	Added	Result	701	KFD	Limit	
Ethane	74-84-0	0.17U	0.17	97	96	99	70 - 130	97	100	104	5	20	
Ethene	74-85-1	0.24U	0.24	120	120	100	70 - 130	120	120	103	3	20	
Methane	74-82-8	2.0U	2.0	380	350	92	70 - 130	380	360	95	3	20	

	CUSTODY Analytical Request Document		LAB USE ONLY- Affix Wor	korder/Login Label Here or List I	
Pace Analytical Chain-of-Cust	ody is a LEGAL DOCUMENT - Complete all relevent fields	4.77		Client ID: AGM-Gr	- Arcadis Greenville
Company: Arcadis	Billing Information:		ALL SHAD	SDG: 221091833	
Address: 7550 TeaqueRd.		0	Container Preservative T	PM: RWe	
Report To: fina armstrong	Email To:	** Preservat	ive Types: (1) nitric acid, (2) sul I, (7) sodium bisulfate, (8) sodiu	ım thiosulfate, (9) hexane, (A) ascorbi	c acid, (B) ammonium sulfate,
Copy To: Shwetha Sridharan	Site Collection Info/Address St.	(C) ammoniu	um hydroxide, (D) TSP, (U) Unpr Analyses	reserved, (O) Other Nag YO	4
Customer Project Name/Number:	State: County/City: Time Zone Collected:	r %-			ple Receipt Checklist:
3007 5892.02 Phone: Site/Facility ID #:	MD/ HavsedeGrace PT[]MT[]CT [Ge	SNO		Custody	Seals Present/Intact Y N NA Signatures Present Y N NA
Phone: Site/Facility ID #:	Cytec MYes [] No	601		Bottles	or Signature Present Y N NA Intact Y N NA Rottles Y N NA
Collected By (print): And Feild Purchase Order #: Quote #:	DW PWS ID #: DW Location Code:	7		Suffici	Bottles Y N NA Lent Volume Y N NA Received on Ice Y N NA
Collected By (signature): Turnaround Date Re		7 0		VOA - H USDA Re	Meadspace Acceptable Y N NA
Sample Disposal: Rush:	[Y Yes [] No Field Filtered (if applicable):	72		Residua	s in Holding Time Y N NA al Chlorine Present Y N NA
[] Dispose as appropriate [] Return [] Same Da	y [] Next Day [] Yes [No	3			pH Acceptable Y N NA
[] Hold: (Expedit	Day [] 4 Day [] 5 Day Analysis:				e Present Y N NA
* Matrix Codes (Insert in Matrix box below): Drinking W Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AF	R), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)	#		LAB USI	
Customer Sample ID Matrix * Gr	ab Composite Start) Composite End Cl Ctr	f .0		hab Sai	ipre # / conditions.
1112(20112)	9/14/21 1145 3	3			
MW3(091421) GW G MM 16/091421) GW G	11.79	3 3			2
DUPO 2/09/421) GW 6	1, 1, 1, 1	3 3	150		3
	3/15/21/0750	3 7			7
MW 23 (091521)40 GW (3	d L		5
	C 9/15/21 6846				7
	S 9/15/21 1015	33		4 5 5	8
MW20D1(091521) CV 6 MW18 (091521) 24 (W)		? 3			9
		3 3		to are	lò
Customer Remarks / Special Conditions / Possible Hazar		SHO	ORT HOLDS PRESENT (<72 h	ours): Y N N/A	Lab Sample Temperature Info: Temp Blank Received: Y N NA
Trip Blank = 3x	Packing Material Used: 1194	Lab	Tracking #: 26	64534	Therm ID#: oC Cooler 1 Temp Upon Receipt: oC
	Radchem sample(s) screened (<500 cpm): Y N	NA San	nples received via: FEDEX UPS Client	Courier Pace Courier	Cooler 1 Therm Corr. Factor:oC Cooler 1 Corrected Temp:oC
	Date/Time: Received by/Company: (Signature)		FEDEX UPS Client Date/Time:	MTJL LAB USE ONLY	Comments:
Relinquished by Company (Signature)				Table #: Acctnum:	2.3 E34 37cpm
Relinquished by/Gompany: (Signature)	Date/Time: Received by/Company://signature		Date/Time: 9/16/1700	Template:	Trip Blank Received: Y N NA HCL MeOH TSP Other
redex	9/16/21 700 Certification (Signature		Date/Time:	Prelogin:	
Relinquished by/Company: (Signature)	Date/Time: Received by/Company: (Signature		Sate/ Illie	PM: PB:	Non Conformance(s): Page: YES / NO of:



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROU	JP 2210918	33	CHECKLIST		YES	NO
Client PM RWe AGW-Gr - Arcadis Greenville	Transport M	lethod	Samples received with proper thermal preservation	?	~	
			Radioactivity is <1600 cpm? If no, record cpm valu	e in notes section.	~	
Profile Number 284908	Received By McCune, Dodi		COC relinquished and complete (including sample	~		
204908 IVICCUITIE, LOOIIE N.		O I E	All containers received in good condition and within	n hold time?	~	
Line Item(s)	m(s) Receive Date(s) 09/16/21		All sample labels and containers received match the	ne chain of custody?	~	
1 - MEE	09/16/21		Preservative added to any containers?			~
			If received, was headspace for VOC water contained	ers < 6mm?	~	
			Samples collected in containers provided by Pace	Gulf Coast?	~	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill Thermomet	ter ID: E34	Temp °C	None	None		
811600011194		2.3				
NOTES						

Revision 1.6

Page 1 of 1



ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast

7979 Innovation Park Dr. Baton Rouge, LA 70820 (225) 769-4900

Report Date 11/15/2021

Report # 221110141



Project 30075892.02 Cytec

Samples Collected 10/29/21

Deliver To

Tina Armstrong Arcadis 7550 Teague Road Suite 210 Hanover, MD 21076 410-923-7807

Additional Recipients

Shwetha Sridharan, Arcadis









Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND Indicates the result was Not Detected at the specified reporting limit

NO Indicates the sample did not ignite when preliminary test performed for EPA Method 1030

DO Indicates the result was Diluted Out

MI Indicates the result was subject to Matrix Interference
TNTC Indicates the result was Too Numerous To Count
SUBC Indicates the analysis was Sub-Contracted
FLD Indicates the analysis was performed in the Field

DL Detection Limit
LOD Limit of Detection
LOQ Limit of Quantitation
RE Re-analysis

CF HPLC or GC Confirmation

00:01 Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I Indicates the result is between the MDL and LOQ

J DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria

U Indicates the compound was analyzed for but not detected B or V Indicates the analyte was detected in the associated Method Blank

B or V Indicates the analyte was detected in the associated Method Blank Indicates a non-compliant QC Result (See Q Flag Application Report)

Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
 Organics - The result is estimated because it exceeded the instrument calibration range

Metals - % diference for the serial dilution is > 10%
 Reporting Limits adjusted to meet risk-based limit.

P RPD between primary and confirmation result is greater than 40

DL Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature

Pace Gulf Coast Report 221110141



Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

Case Narrative

Client: Arcadis Greenville Report: 221110141

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

COC ANOMALIES

COC Anomalies\Changes - The sample for SDG 221110141 was received outside of the prescribed temperature range. Please refer to the preservative checklist for details on the temperature upon receipt. (Ruth Welsh(Do Not 11/03/2021 08:47)



Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

Sample Summary

Lab ID	Client ID	Matrix	Collect Date	Receive Date
22111014101	MW-19D1 (102921)	Water	10/29/21 10:00	10/30/21 12:00



Project ID: 30075892.02 Cytec

Detect Summary

Report Date: 11/15/2021

Results and Detection Limits are adjusted for dilution and moisture when applicable

		AM20GAX				
Lab ID	Client ID	Parameter	Units	Result	Dil.	%Moist
22111014101	MW-19D1 (102921)	Ethane	ug/L	2.4	1	NA
22111014101	MW-19D1 (102921)	Methane	ug/L	91	1	NA



Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

Sample Results

MW-19D1 (102921)

| Collect Date | 10/29/2021 10:00 | Lab ID | 22111014101 |
| Receive Date | 10/30/2021 12:00 | Matrix | Water |

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	11/12/21 12:28	726563	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			2.4	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			91	2.0	5.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 11/15/2021

General Chromatography QC Summary

Analytical Batch	Client ID	MB726563		LCS726	563			LCSD72	6563			
726563 Lab ID		2271390	2271391		2271392							
Sample Type		MB	LCS LCSD									
	Prep Date	NA		NA				NA				
	Analysis Date	11/12/21 11:56	i	11/12/21	11:22			11/12/21	l 11:33			
	Matrix	Water		Water				Water				
AM20GAX		Units	ug/L	Spike	Result	0/. D	Control	Spike	Result	0/. D	DDD	RPD
AWIZUGAX		Result	DL	Added	Nesuit	/01	Limits%R	Added	Nesuit	/013	KED	Limit
Ethane	74-84-0	0.17U	0.17	97	110	114	70 - 130	97	110	114	0	20
Ethene	74-85-1	0.24U	0.24	120	140	113	70 - 130	120	140	114	1	20
Methane	74-82-8	2.2J	2.0	380	370	97	70 - 130	380	370	97	1	20

Pace Analytical*	CHAIN	I-OF-CL	JSTODY	Analyt	ical Rec	uest D	ocum	ent			LA	B USE	ONLY- A	Affix W				14.0				
. 4.65	Chain	-of-Custod	y is a LEGAL	DOCUMEN	NT - Comple	ete all relev	ent field:	S							С	lient l	D: AGI	VI-Gr	- Arcadis Gr	eenv	ille	
Company: Arcadis	S		Billing In	formation:									ALL	SHA	c s	DG:	221110	141				iii
Address: 7550 T-	eaque	Rd.								_	Со	ntaine	r Preser	vative	I P	M:	RWe					
Report To: Tina Arm	astron	a	Email To:				-		** Pr	reserva	ative Ty	/pes: (1	nitric aci	id, (2) s	ultung ago	L CALUVO	rocolooc acu	u, (4) sou	lum nyaroxiae, (ə) zi	nc aced	ne,	111
Copy To: Shwetha	Sridba	Zavo		ction Info/	Address:	12.	61-0	10	(6) m	nethan	ol, (/) s	sodium	bisulfate,	, (8) soc	ium thios	ılfate, (9)	hexane, (A)	ascorbic	acid, (B) ammonium	sulfate		
Customer Project Name/Number:	2116110	A CHI	State:	County/C	Revol	ime Zone C	Stre						Analys					Profile/L	ine:			
30075					de Grb				S						# F	6	E -9		le Receipt Che Seals Present/			a
Phone: Email:	Site/Facility II	D#: CL	1te	C .	Compliar [] Yes	nce Monito [] No			8		2						Cu	stody llecto	Signatures Pre r Signature Pr	sent	Y N NA Y N NA	
Collected By (print):	Purchase Ord Quote #:	er #:			DW PWS	ID #: tion Code:			5		6	ŀſ					Co	rrect	Intact Bottles nt Volume		Y N NA Y N NA Y N NA	
Collected By (signature):	Turnaround D	Pate Requir				tely Packed		q	Ca		ġ,						VO	A - He	Received on Ic adspace Accept ulated Soils		Y N NA Y N NA	
Sample Disposal:	Rush:	WILL	VI 0		Field Filte	[] No ered (if app			6		Parks	4				6.3	Sa	mples	in Holding Tim		Y N NA Y N NA	
] Dispose as appropriate [] Return			[] Next D		[] Yes	No.			0	,					G.		Cl	Strip		ent	Y N NA	
] Archive:] Hold:	[] 2 Day		[] 4 Day arges Apply)	[] 5 Day	Analysis:	-	\$. ·	gi .	出	' -		- 3			3		Sa pH	mple p	H Acceptable s:		Y N NA	
Matrix Codes (Insert in Matrix bo Product (P), Soil/Solid (SL), Oil (O	x below): Drink	ing Water	(DW), Grou	ind Water	(GW), Was , Vapor (V)	tewater (W	/W),		士						8		Le	ad Ace	Present tate Strips: _		Y N NA	
Customer Sample ID	Matrix *	Comp / Grab	Collec	ted (or site Start)		osite End	Res	# of Ctns	Ligh	7	Ė	**						B USE (b Samp	ONLY: le # / Comment	s:		
Millon II amil			Date	Time	Date	Time				0.0		. 9	2		a		8.6					
MW-19DI (102921)	GW.	G	10/29/3	1000		Commence of the Commence of th	-	3	3	Å	4	- mars.					9 4					T
				학교:					9	(13)		- 3	3	3	8		8.3					
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	-									5	Į.			- T			2.7	1-1-1				
ustomer Remarks / Special Conditi	ions / Possible H	lazards:	Type of Ice	Used:	Wet I	Blue Di	ry No	one		SHO	RT HO	LDS PI	RESENT ((<72 h	ours): Y	N	N/A	La	b Sample Tempera	ature li	nfo:	
			Packing M	aterial Use	d:	./ 11	1/05	-		Lab 7	Trackir	ng #:	2	79	228	91			Temp Blank Rece	ived:	Y N NA	
			71	50	695	4 4	100:)					£		-20	01			Therm ID#: Cooler 1 Temp Up	oon Re	ceipt:	oC
			Radchem s	sample(s) s	creened (<	500 cpm):	Y N	NA NA				ceivec		liont	Caunta				Cooler 1 Therm C	orr. Fa	ctor:	оС
linquished by/Company: (Signatur	re)	Date	/Time:	· 1	Received b	v/Company	v. (Signat	urel			Date/T		PS CI	lient			ce Courier JSE ONLY		Cooler 1 Correcte Comments:	d Tem	p:	эC
mon	Arcad.	5 11	0/29/-	21	-					ľ	oute/ I	ine.			Table #:		JE OIVET		9.2E34			100
elinquished by/Company: (Signatur	re)		/Time:		Received b	y/Company	y: (Signat	ure)		Ī	Date/1	Γime:			Acctnum:			-	Trip Blank Receive	ed: Y	N NA	
FUE X	re)		/30/11 /Time:	1700	Received b	4 Company	" /Signat	urol			D(30		120		remplate Prelogin:				HCL MeOH	TSP	Other	
,, , , , , , , , , , , , , , , , , , , ,	1	Date	, inici		nwceived D	y, company	y, (Signat	urej		ľ	Date/T	ime:		- 1	PM: PB:			N	Ion Conformance(YES / NO		Page: of:	



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROU	JP 2211101	41	CHECKLIST		YES	NO
Client PM RWe AGW-Gr - Arcadis Greenville	Transport M	lethod	Samples received with proper thermal preservation	?		~
			Radioactivity is <1600 cpm? If no, record cpm valu	e in notes section.	~	
Profile Number 284908	McQune, Dodie N.		COC relinquished and complete (including sample	Ds, collect times, and sampler)?	~	
204300	IVECUITE, EXC	G IV.	All containers received in good condition and within	n hold time?	~	
Line Item(s)		All sample labels and containers received match the ch		ne chain of custody?	~	
1 - MŒ	10/30/21		Preservative added to any containers?			
			If received, was headspace for VOC water contained	ers < 6mm?	~	
			Samples collected in containers provided by Pace	Gulf Coast?	~	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill Thermomet	ter ID: E34	Temp °C	None	None		
775069544805		9.2				
NOTES						

Revision 1.6



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-127160-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan



Authorized for release by: 10/6/2021 11:31:39 AM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	15
QC Sample Results	29
QC Association Summary	36
Chain of Custody	40
Receipt Chacklists	43

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Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-127160-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-127160-1

Receipt

The samples were received on 9/16/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.6° C, 2.6° C and 4.6° C.

GC/MS VOA

Due to the concentration of target compounds detected, several samples were analyzed at a dilution.

Sample MW16(091421) (180-127160-8) and MW27(091521) (180-127160-10) had surrogates recover above the control limits. These samples were non-detect for all target compounds. All data was reported.

The laboratory control sample (LCS) for batch 180-372540 recovered outside control limits for cis-1,2-Dichloroethene. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The relative percent difference between the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch 180-372540 was outside of the control limits for cis-1,2-Dichloroethene, Chloroform, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Methylene Chloride and Trichloroethene

The continuing calibration verification (CCV) analyzed in batch 180-372540 was outside the method criteria for the following analyte(s): 4-Bromofluorobenzene (LOW). All samples recovered this surrogate within QC criteria.

The continuing calibration verification (CCV) analyzed in batch 180-372540 was outside the method criteria for the following analyte(s): Chloroethane, Vinyl chloride and Methylene Chloride (LOW). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in 180-372936 was outside the method criteria for the following analyte(s): 1.1.2-Trichloroethane. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

GC		

 Qualifier
 Qualifier Description

 *+
 LCS and/or LCSD is outside acceptance limits, high biased.

*1 LCS/LCSD RPD exceeds control limits.

E Result exceeded calibration range.

F2 MS/MSD RPD exceeds control limits

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

S1+ Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier Description

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery

CFL Contains Free Liquid

CFU Colony Forming Unit

CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22
Virginia	NELAP	10043	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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 $^{^{\}star} \ \text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

MW18(091521)31

180-127160-23

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-127160-1	MW4(091421)	Water	09/14/21 11:30	09/16/21 09:30
180-127160-2	MW8S(091421)	Water	09/14/21 13:20	09/16/21 09:30
180-127160-3	MW12S(091421)	Water	09/14/21 10:45	09/16/21 09:30
180-127160-4	MW6I(091521)	Water	09/15/21 12:40	09/16/21 09:30
180-127160-5	MW12D(091421)	Water	09/14/21 10:55	09/16/21 09:30
180-127160-6	MW13D(091421)	Water	09/14/21 10:10	09/16/21 09:30
180-127160-7	MW14I(091521)	Water	09/15/21 07:50	09/16/21 09:30
180-127160-8	MW16(091421)	Water	09/14/21 13:50	09/16/21 09:30
180-127160-9	MW25I(091421)	Water	09/14/21 11:10	09/16/21 09:30
180-127160-10	MW27(091521)	Water	09/15/21 10:15	09/16/21 09:30
180-127160-11	MW28D(091421)	Water	09/14/21 10:30	09/16/21 09:30
180-127160-12	MW3(091421)	Water	09/14/21 11:45	09/16/21 09:30
180-127160-13	MW8D(091421)	Water	09/14/21 13:10	09/16/21 09:30
180-127160-14	MW14(091521)	Water	09/15/21 08:00	09/16/21 09:30
180-127160-15	MW18(091521)24	Water	09/15/21 09:30	09/16/21 09:30
180-127160-16	MW20DI(091521)	Water	09/15/21 09:10	09/16/21 09:30
180-127160-17	MW22D(091421)	Water	09/14/21 12:55	09/16/21 09:30
180-127160-18	MW23(091521)40	Water	09/15/21 08:30	09/16/21 09:30
180-127160-19	DUP01(091421)	Water	09/14/21 12:00	09/16/21 09:30
180-127160-20	DUP02(091421)	Water	09/14/21 13:00	09/16/21 09:30
180-127160-21	TRIP BLANK	Water	09/14/21 00:00	09/16/21 09:30
180-127160-22	MW23(091521)47	Water	09/15/21 08:40	09/16/21 09:30

Water

09/15/21 09:40 09/16/21 09:30

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Method Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method **Method Description** Protocol Laboratory **EPA 8260D** SW846 TAL PIT Volatile Organic Compounds by GC/MS EPA 300.0 R2.1 Anions, Ion Chromatography **EPA TAL PIT** EPA 6020B Metals (ICP/MS) SW846 TAL PIT EPA 9060A Organic Carbon, Total (TOC) SW846 TAL PIT 3005A Preparation, Total Recoverable or Dissolved Metals SW846 TAL PIT 5030C Purge and Trap SW846 TAL PIT **FILTRATION** Sample Filtration None TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Job ID: 180-127160-1

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Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW4(091421)

Date Collected: 09/14/21 11:30

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-1

Matrix: Water

Job ID: 180-127160-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 13:14	KLG	TAL PIT
	Instrumer	t ID: CHHP9								

Client Sample ID: MW8S(091421)

Date Collected: 09/14/21 13:20 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-2 **Matrix: Water**

Lab Sample ID: 180-127160-4

Lab Sample ID: 180-127160-5

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 13:36	KLG	TAL PIT
	Instrumon	+ ID: CHHD0								

Client Sample ID: MW12S(091421)

Date Collected: 09/14/21 10:45

Lab Sample ID: 180-127160-3 **Matrix: Water**

Date Received: 09/16/21 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 13:57	KLG	TAL PIT
	Instrumer	nt ID: CHHP9								

Client Sample ID: MW6I(091521)

Date Collected: 09/15/21 12:40 **Matrix: Water** Date Received: 09/16/21 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		2	5 mL	5 mL	372936	09/27/21 10:21	KLG	TAL PIT
	Instrumer	nt ID: CHHP9								

Client Sample ID: MW12D(091421)

Date Collected: 09/14/21 10:55

Date Received: 09/16/21 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 11:48	KLG	TAL PIT
	Instrumer	nt ID: CHHP9								

Client Sample ID: MW13D(091421)

Lab Sample ID: 180-127160-6 Date Collected: 09/14/21 10:10 **Matrix: Water**

Date Received: 09/16/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 16:49	KLG	TAL PIT
	Instrumen	it ID: CHHP9								

Client Sample ID: MW14I(091521) Lab Sample ID: 180-127160-7

Date Collected: 09/15/21 07:50 Date Received: 09/16/21 09:30

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumer	EPA 8260D at ID: CHHP9		1	5 mL	5 mL	372888	09/25/21 15:02	KLG	TAL PIT
Total/NA	Analysis Instrumer	EPA 300.0 R2.1 at ID: INTEGRION		1			372885	09/26/21 07:46	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PIT
Dissolved	Analysis Instrumer	EPA 6020B at ID: DORY		1			373978	10/02/21 15:32	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	373358	09/29/21 13:44	AMD	TAL PIT
Total Recoverable	Analysis Instrumer	EPA 6020B at ID: DORY		1			373752	10/01/21 12:01	RSK	TAL PIT
Total/NA	Analysis Instrumer	EPA 9060A at ID: TOC1030		1			374039	10/04/21 14:54	KMM	TAL PIT

Client Sample ID: MW16(091421)

Date Collected: 09/14/21 13:50

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-8

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 8260D at ID: CHHP10		1	5 mL	5 mL	372540	09/23/21 16:22	C1K	TAL PI
Total/NA	Analysis Instrumen	EPA 300.0 R2.1 at ID: INTEGRION		1			372885	09/25/21 16:53	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PI
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PI
Dissolved	Analysis Instrumen	EPA 6020B at ID: DORY		1			373978	10/02/21 15:36	RSK	TAL PI
Total Recoverable	Prep	3005A			50 mL	50 mL	373358	09/29/21 13:44	AMD	TAL PI
Total Recoverable	Analysis Instrumen	EPA 6020B at ID: DORY		1			373752	10/01/21 12:04	RSK	TAL PIT
Total/NA	Analysis Instrumen	EPA 9060A		1			373531	09/30/21 01:07	KMM	TAL PIT

Client Sample ID: MW25I(091421)

Date Collected: 09/14/21 11:10

Date Received: 09/16/21 09:30

Lab Sample	ID: 180-127160-9

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372540	09/23/21 16:52	C1K	TAL PIT
	Instrumer	nt ID: CHHP10								

10/6/2021

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID: 180-127160-10

Matrix: Water

Client Sample ID: MW27(091521)
Date Collected: 09/15/21 10:15

Date Received: 09/16/21 09:30

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 8260D t ID: CHHP10		1	5 mL	5 mL	372540	09/23/21 17:21	C1K	TAL PIT
Total/NA	Analysis Instrumen	EPA 300.0 R2.1 t ID: INTEGRION		1			372885	09/26/21 06:53	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PIT
Dissolved	Analysis Instrumen	EPA 6020B t ID: DORY		1			373978	10/02/21 15:39	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	373358	09/29/21 13:44	AMD	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 6020B t ID: DORY		1			373752	10/01/21 12:15	RSK	TAL PIT
Total/NA	Analysis Instrumen	EPA 9060A t ID: TOC1030		1			374039	10/04/21 15:19	KMM	TAL PIT

Client Sample ID: MW28D(091421)

Date Collected: 09/14/21 10:30

Date Received: 09/16/21 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		5	5 mL	5 mL	372540	09/23/21 17:50	C1K	TAL PIT
	Instrumer	t ID: CHHP10								
Total/NA	Analysis	EPA 8260D	DL	50	5 mL	5 mL	372888	09/25/21 12:53	KLG	TAL PIT
	Instrumer	t ID: CHHP9								

Client Sample ID: MW3(091421)

Date Collected: 09/14/21 11:45 Date Received: 09/16/21 09:30

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Type Method Run **Factor Amount** Amount Number or Analyzed **Analyst EPA 8260D** 372540 09/23/21 18:19 C1K TAL PIT Total/NA Analysis 10 5 mL 5 mL Instrument ID: CHHP10 Total/NA Analysis EPA 300.0 R2.1 372885 09/25/21 17:11 J1T TAL PIT 1 Instrument ID: INTEGRION Dissolved Filtration **FILTRATION** 09/17/21 15:53 GRN TAL PIT 1.0 mL 1.0 mL 371949 Dissolved Prep 3005A 50 mL 50 mL 373527 09/30/21 13:51 AMD TAL PIT Dissolved Analysis **EPA 6020B** 373978 10/02/21 15:43 RSK TAL PIT 1 Instrument ID: DORY Total Recoverable Prep 3005A 50 mL 50 mL 373520 09/30/21 13:42 AMD TAL PIT Total Recoverable Analysis **EPA 6020B** 373978 10/02/21 12:16 RSK TAL PIT 1 Instrument ID: DORY Total/NA Analysis **EPA 9060A** 373531 09/30/21 01:31 KMM TAL PIT Instrument ID: TOC1030

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Lab Sample ID: 180-127160-11

Matrix: Water

Matrix: Water

Lab Sample ID: 180-127160-12

Lab Chronicle

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW8D(091421)

Date Collected: 09/14/21 13:10 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-13 **Matrix: Water**

Job ID: 180-127160-1

Batch Dil Batch Batch Initial Final Prepared Method Number or Analyzed **Prep Type** Type Run **Factor Amount** Amount Analyst Lab Total/NA **EPA 8260D** 372540 09/23/21 18:47 C1K TAL PIT Analysis 5 mL 5 mL Instrument ID: CHHP10

Lab Sample ID: 180-127160-14 Client Sample ID: MW14(091521)

Date Collected: 09/15/21 08:00 Date Received: 09/16/21 09:30

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared Method Amount Number or Analyzed **Prep Type** Type Run **Factor** Amount Analyst Lab Total/NA Analysis **EPA 8260D** 5 mL 5 mL 372540 09/23/21 19:16 C1K TAL PIT Instrument ID: CHHP10

Client Sample ID: MW18(091521)24 Lab Sample ID: 180-127160-15

Date Collected: 09/15/21 09:30 Date Received: 09/16/21 09:30

Matrix: Water

Batch Batch Dil Initial Final Batch **Prepared** Method or Analyzed **Prep Type** Type Run Factor **Amount** Amount Number **Analyst** Lab Total/NA Analysis **EPA 8260D** 5 mL 5 mL 372888 09/25/21 15:23 KLG TAL PIT Instrument ID: CHHP9 Total/NA Analysis EPA 300.0 R2.1 372885 09/26/21 08:04 J1T TAL PIT Instrument ID: INTEGRION Filtration **FILTRATION** Dissolved 1.0 mL 1.0 mL 371949 09/17/21 15:53 GRN TAL PIT 3005A 50 mL 50 mL 373527 Dissolved Prep 09/30/21 13:51 AMD **TAL PIT** Dissolved Analysis **EPA 6020B** 373978 10/02/21 15:46 RSK TAL PIT 1 Instrument ID: DORY 3005A Total Recoverable Prep 50 mL 50 mL 373655 10/01/21 10:03 AMD TAL PIT **EPA 6020B** 373977 10/02/21 10:29 RSK TAL PIT Total Recoverable Analysis 1

Client Sample ID: MW20DI(091521) Lab Sample ID: 180-127160-16

374039

10/04/21 15:45 KMM

Date Collected: 09/15/21 09:10 Date Received: 09/16/21 09:30

Total/NA

Instrument ID: A

Instrument ID: TOC1030

EPA 9060A

Analysis

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 300.0 R2.1 t ID: INTEGRION		1			372885	09/26/21 08:22	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PIT
Dissolved	Analysis Instrumen	EPA 6020B t ID: DORY		1			373978	10/02/21 15:50	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	373655	10/01/21 10:03	AMD	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 6020B t ID: A		1			373977	10/02/21 10:32	RSK	TAL PIT

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Page 11 of 43

Matrix: Water

TAL PIT

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW20DI(091521) Lab Sample ID: 180-127160-16

Date Collected: 09/15/21 09:10 Date Received: 09/16/21 09:30

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9060A		1	_		374039	10/04/21 16:10	KMM	TAL PIT

Initial

Amount

5 mL

5 mL

372888

Dil

Factor

Run

Client Sample ID: MW22D(091421)

Batch

Type

Batch

Instrument ID: CHHP9

Method

EPA 8260D

Date Collected: 09/14/21 12:55 Date Received: 09/16/21 09:30

Prep Type

Total/NA

Lab Sample ID: 180-127160-17 **Matrix: Water**

Final Batch Prepared Amount Number or Analyzed Analyst Lab

09/25/21 16:06 KLG

Client Sample ID: MW23(091521)40

Analysis

Date Collected: 09/15/21 08:30 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-18

Matrix: Water

TAL PIT

Batch Batch Dil Initial Final **Batch** Prepared **Prep Type** Method Factor **Amount** Number or Analyzed Analyst Type Run Amount Lab **EPA 8260D** 372888 09/25/21 16:27 KLG TAL PIT Total/NA Analysis 5 mL 5 mL Instrument ID: CHHP9 Total/NA TAL PIT Analysis EPA 300.0 R2.1 1 372885 09/26/21 08:40 J1T Instrument ID: INTEGRION Dissolved Filtration **FILTRATION** 1.0 mL 371949 09/17/21 15:53 GRN **TAL PIT** 1.0 mL Dissolved 373527 Prep 3005A 50 mL 50 mL 09/30/21 13:51 AMD TAL PIT Dissolved **EPA 6020B** 373978 10/02/21 15:53 RSK TAL PIT Analysis 1 Instrument ID: DORY 3005A Total Recoverable Prep 50 mL 50 mL 373655 10/01/21 10:03 AMD **TAL PIT** Total Recoverable Analysis **EPA 6020B** 373977 10/02/21 10:36 RSK TAL PIT Instrument ID: A Total/NA EPA 9060A Analysis 374039 10/04/21 16:35 KMM **TAL PIT** Instrument ID: TOC1030

Client Sample ID: DUP01(091421)

Date Collected: 09/14/21 12:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-19 **Matrix: Water**

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372936	09/27/21 12:30	KLG	TAL PIT
	Instrumer	it ID: CHHP9								

Client Sample ID: DUP02(091421)

Lab Sample ID: 180-127160-20 Date Collected: 09/14/21 13:00 **Matrix: Water** Date Received: 09/16/21 09:30

Prep Type Total/NA	Batch Type Analysis Instrumer	Batch Method EPA 8260D at ID: CHHP9	Run	Factor 2	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 372936	Prepared or Analyzed 09/27/21 10:43	Analyst KLG	Lab TAL PIT
Total/NA	Analysis Instrumer	EPA 8260D at ID: CHHP9	DL	5	5 mL	5 mL	372936	09/27/21 12:08	KLG	TAL PIT

Eurofins TestAmerica, Pittsburgh

Page 12 of 43

Project/Site: Cytec Havre de Grace MD

Client Sample ID: DUP02(091421)

Date Collected: 09/14/21 13:00 Date Received: 09/16/21 09:30

Client: ARCADIS U.S., Inc.

Lab Sample ID: 180-127160-20

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			372885	09/25/21 15:42	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PIT
Dissolved	Analysis	EPA 6020B		1			373978	10/02/21 15:57	RSK	TAL PIT
	Instrumen	t ID: DORY								
Total Recoverable	Prep	3005A			50 mL	50 mL	373655	10/01/21 10:03	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			373977	10/02/21 10:40	RSK	TAL PIT
	Instrumen	t ID: A								
Total/NA	Analysis	EPA 9060A		1			373531	09/30/21 01:57	KMM	TAL PIT
	Instrumen	t ID: TOC1030								

Client Sample ID: TRIP BLANK

Date Collected: 09/14/21 00:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-21

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260D		1	5 mL	5 mL	372888	09/25/21 14:40	KLG	TAL PIT
	Instrument	t ID: CHHP9								

Client Sample ID: MW23(091521)47

Date Collected: 09/15/21 08:40 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-22

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 8260D at ID: CHHP9		1	5 mL	5 mL	372888	09/25/21 17:10	KLG	TAL PIT
Total/NA	Analysis Instrumen	EPA 300.0 R2.1 at ID: INTEGRION		1			372885	09/26/21 08:58	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 13:51	AMD	TAL PIT
Dissolved	Analysis Instrumen	EPA 6020B at ID: DORY		1			373978	10/02/21 16:07	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	373655	10/01/21 10:03	AMD	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 6020B at ID: A		1			373977	10/02/21 10:43	RSK	TAL PIT
Total/NA	Analysis Instrumen	EPA 9060A at ID: TOC1030		1			374039	10/04/21 17:01	KMM	TAL PIT

Client Sample ID: MW18(091521)31

Date Collected: 09/15/21 09:40

Date Received: 09/16/21 09:30

Lab Sample ID:	180-12/160-23
	Matrix: Water

Prep Type Total/NA	Batch Type Analysis	Batch Method EPA 8260D	Run	Dil Factor	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 372888	Prepared or Analyzed 09/25/21 17:32	Analyst KLG	Lab TAL PIT
	mstrumer	ILID: CHHP9								

Eurofins TestAmerica, Pittsburgh

Page 13 of 43

Lab Chronicle

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW18(091521)31 Lab Sample ID: 180-127160-23

Date Collected: 09/15/21 09:40 **Matrix: Water** Date Received: 09/16/21 09:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			372885	09/26/21 09:16	J1T	TAL PIT
Dissolved	Filtration	FILTRATION			1.0 mL	1.0 mL	371949	09/17/21 15:53	GRN	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	373527	09/30/21 14:16	AMD	TAL PIT
Dissolved	Analysis	EPA 6020B		1			373978	10/02/21 16:10	RSK	TAL PIT
	Instrumen	it ID: DORY								
Total Recoverable	Prep	3005A			50 mL	50 mL	373655	10/01/21 10:03	AMD	TAL PIT
Total Recoverable	Analysis	EPA 6020B		1			373977	10/02/21 10:47	RSK	TAL PIT
	Instrumen	it ID: A								
Total/NA	Analysis	EPA 9060A		1			374039	10/04/21 17:26	KMM	TAL PIT
	Instrumen	t ID: TOC1030								

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Filtration GRN = Gavin Nicholls

Batch Type: Prep

AMD = Alysha Donlan

Batch Type: Analysis

C1K = Chamaiporn Krisorn

J1T = Jianwu Tang

KLG = Kathy Gordon

KMM = Kendric Moore

RSK = Robert Kurtz

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW4(091421)

Date Collected: 09/14/21 11:30 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:14	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:14	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:14	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:14	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:14	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:14	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:14	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:14	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		34 - 150					09/25/21 13:14	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 13:14	1
Dibromofluoromethane (Surr)	101		49 - 145					09/25/21 13:14	1
Toluene-d8 (Surr)	105		51 - 137					09/25/21 13:14	

Client Sample ID: MW8S(091421)

Date Collected: 09/14/21 13:20

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:36	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:36	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:36	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:36	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:36	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:36	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:36	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:36	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		34 - 150			-		09/25/21 13:36	1
4-Bromofluorobenzene (Surr)	78		43 - 131					09/25/21 13:36	1
Dibromofluoromethane (Surr)	96		49 - 145					09/25/21 13:36	1
Toluene-d8 (Surr)	94		51 - 137					09/25/21 13:36	1

Client Sample ID: MW12S(091421)

Date Collected: 09/14/21 10:45

Date Received: 09/16/21 09:30

Lab	Sample	ID:	180-127160-3
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Matrix: Water

Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:57	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:57	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:57	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:57	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:57	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:57	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:57	1

Eurofins TestAmerica, Pittsburgh

Page 15 of 43

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID: 180-127160-3

Matrix: Water

Job ID: 180-127160-1

Client Sample ID: MW12S(091421) Date Collected: 09/14/21 10:45

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:57	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			34 - 150					09/25/21 13:57	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 13:57	1
Dibromofluoromethane (Surr)	108		49 - 145					09/25/21 13:57	1
Toluene-d8 (Surr)	106		51 - 137					09/25/21 13:57	1

Client Sample ID: MW6I(091521)

Date Collected: 09/15/21 12:40 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-4

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	2.0	1.2	ug/L			09/27/21 10:21	2
1,1,2-Trichloroethane	ND	2.0	0.91	ug/L			09/27/21 10:21	2
1,2-Dichloroethane	52	2.0	1.1	ug/L			09/27/21 10:21	2
Chloroethane	ND	2.0	1.8	ug/L			09/27/21 10:21	2
Chloroform	ND	2.0	1.2	ug/L			09/27/21 10:21	2
cis-1,2-Dichloroethene	ND	2.0	1.4	ug/L			09/27/21 10:21	2
Methylene Chloride	ND	2.0	1.8	ug/L			09/27/21 10:21	2
Trichloroethene	3.5	2.0	1.4	ug/L			09/27/21 10:21	2
Vinyl chloride	ND	2.0	0.81	ug/L			09/27/21 10:21	2

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106	34 - 150		09/27/21 10:21	2
4-Bromofluorobenzene (Surr)	80	43 - 131		09/27/21 10:21	2
Dibromofluoromethane (Surr)	103	49 - 145		09/27/21 10:21	2
Toluene-d8 (Surr)	105	51 - 137		09/27/21 10:21	2

Client Sample ID: MW12D(091421)

Date Collected: 09/14/21 10:55 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-5

Matrix: Water

Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result Q	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND		1.0	0.60	ug/L			09/25/21 11:48	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 11:48	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 11:48	1
Chloroethane	ND F	2	1.0	0.90	ug/L			09/25/21 11:48	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 11:48	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 11:48	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 11:48	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 11:48	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 11:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		34 - 150		09/25/21 11:48	1
4-Bromofluorobenzene (Surr)	79		43 - 131		09/25/21 11:48	1
Dibromofluoromethane (Surr)	98		49 - 145		09/25/21 11:48	1

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Page 16 of 43

Lab Sample ID: 180-127160-5 Date Collected: 09/14/21 10:55 **Matrix: Water**

Date Received: 09/16/21 09:30

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

%Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 106 51 - 137 09/25/21 11:48

Client Sample ID: MW13D(091421) Lab Sample ID: 180-127160-6

Date Collected: 09/14/21 10:10 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result Qual	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			09/25/21 16:49	1
1,1,2-Trichloroethane	1.9	1.0	0.45	ug/L			09/25/21 16:49	1
1,2-Dichloroethane	16	1.0	0.57	ug/L			09/25/21 16:49	1
Chloroethane	ND	1.0	0.90	ug/L			09/25/21 16:49	1
Chloroform	ND	1.0	0.60	ug/L			09/25/21 16:49	1
cis-1,2-Dichloroethene	ND	1.0	0.71	ug/L			09/25/21 16:49	1
Methylene Chloride	ND	1.0	0.89	ug/L			09/25/21 16:49	1
Trichloroethene	2.8	1.0	0.69	ug/L			09/25/21 16:49	1
Vinyl chloride	ND	1.0	0.41	ug/L			09/25/21 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared Analy.	zed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		34 - 150	09/25/21	16:49	1
4-Bromofluorobenzene (Surr)	74		43 - 131	09/25/21	16:49	1
Dibromofluoromethane (Surr)	110		49 - 145	09/25/21	16:49	1
Toluene-d8 (Surr)	105		51 - 137	09/25/21	16:49	1

Lab Sample ID: 180-127160-7 Client Sample ID: MW14I(091521)

Date Collected: 09/15/21 07:50 Date Received: 09/16/21 09:30

Toluene-d8 (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 15:02	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 15:02	1
1,2-Dichloroethane	4.4		1.0	0.57	ug/L			09/25/21 15:02	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 15:02	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 15:02	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 15:02	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 15:02	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 15:02	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 15:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		34 - 150					09/25/21 15:02	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 15:02	1
Dibromofluoromethane (Surr)	118		49 _ 145					09/25/21 15:02	1

_ Method: EPA 300.0 R2.1 - Anio	ns, Ion Chr	omatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	53		1.0	0.76	mg/L			09/26/21 07:46	1

51 - 137

124

Eurofins TestAmerica, Pittsburgh

Job ID: 180-127160-1

Matrix: Water

09/25/21 15:02

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW14I(091521)

Date Collected: 09/15/21 07:50 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-7

Matrix: Water

Job ID: 180-127160-1

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Iron	47000	50	20 ug/L		09/29/21 13:44	10/01/21 12:01	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19000	50	20 ug/L		09/30/21 13:51	10/02/21 15:32	1

General Chemistry

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.6	1.0	0.51 mg/L			10/04/21 14:54	1

Client Sample ID: MW16(091421)

Lab Sample ID: 180-127160-8 Date Collected: 09/14/21 13:50 **Matrix: Water**

Date Received: 09/16/21 09:30

Mathad. EDA COCOD	Valatila Organia Commanda by CC/MC

WELLIOU. LFA 0200D - VOIAL	ne Organic Co	ilipuullus by	GC/IVIS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1	1.0	0.60	ug/L			09/23/21 16:22	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 16:22	1
1,2-Dichloroethane	ND	*1	1.0	0.57	ug/L			09/23/21 16:22	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 16:22	1
Chloroform	ND	*1	1.0	0.60	ug/L			09/23/21 16:22	1
cis-1,2-Dichloroethene	ND	*+ *1	1.0	0.71	ug/L			09/23/21 16:22	1
Methylene Chloride	ND	*1	1.0	0.89	ug/L			09/23/21 16:22	1
Trichloroethene	ND	*1	1.0	0.69	ug/L			09/23/21 16:22	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	73		34 - 150		09/23/21 16:22	1
4-Bromofluorobenzene (Surr)	139	S1+	43 - 131		09/23/21 16:22	1
Dibromofluoromethane (Surr)	60		49 - 145		09/23/21 16:22	1
Toluene-d8 (Surr)	166	S1+	51 - 137		09/23/21 16:22	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac	
Sulfate	9.5	1.0	0.76 mg/L			09/25/21 16:53	1	

Method: EPA	6020B - Metals	(ICP/MS)	- Total	Recoverable
mothod. Li A	OULUD Mictais		lotui	1 CCCC T CI UDIC

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Iron	44000	50	20 ug/L	09/29/21 13:44	10/01/21 12:04	1

Method: EPA 6020B	- Metals ((ICP/MS) - Dissolved
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Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Iron Dissolved	17000	50	20 ua/L		09/30/21 13:51	10/02/21 15:36	1

General Chemistry

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.98 J	1.0	0.51 mg/L			09/30/21 01:07	1

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW25I(091421)

Date Collected: 09/14/21 11:10 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-9

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1	1.0	0.60	ug/L			09/23/21 16:52	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 16:52	1
1,2-Dichloroethane	2.7	*1	1.0	0.57	ug/L			09/23/21 16:52	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 16:52	1
Chloroform	ND	*1	1.0	0.60	ug/L			09/23/21 16:52	1
cis-1,2-Dichloroethene	ND	*+ *1	1.0	0.71	ug/L			09/23/21 16:52	1
Methylene Chloride	ND	*1	1.0	0.89	ug/L			09/23/21 16:52	1
Trichloroethene	1.7	*1	1.0	0.69	ug/L			09/23/21 16:52	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 16:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		34 - 150					09/23/21 16:52	1
4-Bromofluorobenzene (Surr)	79		43 - 131					09/23/21 16:52	1
Dibromofluoromethane (Surr)	90		49 - 145					09/23/21 16:52	1
Toluene-d8 (Surr)	66		51 - 137					09/23/21 16:52	1

Client Sample ID: MW27(091521) Lab Sample ID: 180-127160-10

Date Collected: 09/15/21 10:15

Date Received: 09/16/21 09:30

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1	1.0	0.60	ug/L			09/23/21 17:21	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 17:21	1
1,2-Dichloroethane	ND	*1	1.0	0.57	ug/L			09/23/21 17:21	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 17:21	1
Chloroform	ND	*1	1.0	0.60	ug/L			09/23/21 17:21	1
cis-1,2-Dichloroethene	ND	*+ *1	1.0	0.71	ug/L			09/23/21 17:21	1
Methylene Chloride	ND	*1	1.0	0.89	ug/L			09/23/21 17:21	1
Trichloroethene	ND	*1	1.0	0.69	ug/L			09/23/21 17:21	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 17:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	142		34 - 150					09/23/21 17:21	1
4-Bromofluorobenzene (Surr)	71		43 - 131					09/23/21 17:21	1
Dibromofluoromethane (Surr)	156	S1+	49 - 145					09/23/21 17:21	1
Toluene-d8 (Surr)	96		51 - 137					09/23/21 17:21	1
Method: EPA 300.0 R2.1 - A	nions, Ion Ch	omatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.1		1.0	0.76	mg/L			09/26/21 06:53	1
Method: EPA 6020B - Metal	s (ICP/MS) - To	otal Recov	erable						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	28000		50	20	ug/L		09/29/21 13:44	10/01/21 12:15	1
Method: EPA 6020B - Metal	s (ICP/MS) - D	issolved							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	21000		50	20	ug/L		09/30/21 13:51	10/02/21 15:39	

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW27(091521)

Date Collected: 09/15/21 10:15 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-10

Matrix: Water

General	Chemistry
Analuta	

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.88 J	1.0	0.51 mg/L			10/04/21 15:19	1

Client Sample ID: MW28D(091421)

Date Collected: 09/14/21 10:30

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-11

Matrix: Water

Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD	*1	5.0	3.0	ug/L			09/23/21 17:50	5
1,1,2-Trichloroethane	ND		5.0	2.3	ug/L			09/23/21 17:50	5
1,2-Dichloroethane	920	E *1	5.0	2.9	ug/L			09/23/21 17:50	5
Chloroethane	ND		5.0	4.5	ug/L			09/23/21 17:50	5
Chloroform	ND	*1	5.0	3.0	ug/L			09/23/21 17:50	5
cis-1,2-Dichloroethene	ND	*+ *1	5.0	3.5	ug/L			09/23/21 17:50	5
Methylene Chloride	ND	*1	5.0	4.4	ug/L			09/23/21 17:50	5
Trichloroethene	ND	*1	5.0	3.4	ug/L			09/23/21 17:50	5
Vinyl chloride	ND		5.0	2.0	ug/L			09/23/21 17:50	5

Surrogate	%Recovery	Qualifier L	imits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81	3	<u>34 - 150</u>		09/23/21 17:50	5
4-Bromofluorobenzene (Surr)	83	4	13 - 131		09/23/21 17:50	5
Dibromofluoromethane (Surr)	91	4	¹⁹ - 145		09/23/21 17:50	5
Toluene-d8 (Surr)	86	5	51 - 137		09/23/21 17:50	5

Method: EPA 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result Qua	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	50	30	ug/L			09/25/21 12:53	50
1,1,2-Trichloroethane	ND	50	23	ug/L			09/25/21 12:53	50
1,2-Dichloroethane	1200	50	29	ug/L			09/25/21 12:53	50
Chloroethane	ND	50	45	ug/L			09/25/21 12:53	50
Chloroform	ND	50	30	ug/L			09/25/21 12:53	50
cis-1,2-Dichloroethene	ND	50	35	ug/L			09/25/21 12:53	50
Methylene Chloride	ND	50	44	ug/L			09/25/21 12:53	50
Trichloroethene	ND	50	34	ug/L			09/25/21 12:53	50
Vinyl chloride	ND	50	20	ug/L			09/25/21 12:53	50

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100	34 - 150	09/25/21 12:5	3 50
4-Bromofluorobenzene (Surr)	80	43 - 131	09/25/21 12:5	3 50
Dibromofluoromethane (Surr)	102	49 - 145	09/25/21 12:5	3 50
Toluene-d8 (Surr)	109	51 - 137	09/25/21 12:5	3 50

Client Sample ID: MW3(091421)

Date Received: 09/16/21 09:30

Date Collected: 09/14/21 11:45

Lab Sample ID: 180-127160-12

Matrix: Water

Method: EPA 8260D - Volatile	Organic Com	pounds by	GC/MS						
Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND *	1	10	6.0	ug/L			09/23/21 18:19	10
1,1,2-Trichloroethane	ND		10	4.5	ug/L			09/23/21 18:19	10
1,2-Dichloroethane	41 *	1	10	5.7	ug/L			09/23/21 18:19	10

Eurofins TestAmerica, Pittsburgh

Page 20 of 43

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW3(091421)

Date Collected: 09/14/21 11:45 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-12

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		10	9.0	ug/L			09/23/21 18:19	10
Chloroform	ND	*1	10	6.0	ug/L			09/23/21 18:19	10
cis-1,2-Dichloroethene	ND	*+ *1	10	7.1	ug/L			09/23/21 18:19	10
Methylene Chloride	35	*1	10	8.9	ug/L			09/23/21 18:19	10
Trichloroethene	ND	*1	10	6.9	ug/L			09/23/21 18:19	10
Vinyl chloride	59		10	4.1	ug/L			09/23/21 18:19	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		34 - 150			-		09/23/21 18:19	10
4-Bromofluorobenzene (Surr)	52		43 - 131					09/23/21 18:19	10
Dibromofluoromethane (Surr)	70		49 - 145					09/23/21 18:19	10
Toluene-d8 (Surr)	106		51 - 137					09/23/21 18:19	10

loluene-d8 (Surr)	106		51 - 137					09/23/21 18:19	10
Method: EPA 300.0 R2.1 - An	ions, Ion Chi	romatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4		1.0	0.76	mg/L			09/25/21 17:11	1
F	((OD(140)) T								
Method: EPA 6020B - Metals Analyte	•	otal Recove Qualifier	erable RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: EPA 6020B - Metals Analyte Iron	•				Unit ug/L	<u>D</u>	Prepared 09/30/21 13:42	Analyzed 10/02/21 12:16	Dil Fac
Analyte	Result 3900	Qualifier	RL			<u>D</u>			Dil Fac
Analyte Iron	Result 3900 (ICP/MS) - D	Qualifier	RL		ug/L	<u>D</u>			Dil Fac Dil Fac

0.51 mg/L **Total Organic Carbon - Quad** 1.0 09/30/21 01:31 0.94 J Client Sample ID: MW8D(091421) Lab Sample ID: 180-127160-13 Date Collected: 09/14/21 13:10

RL

MDL Unit

Prepared

Result Qualifier

Date Received: 09/16/21 09:30

General Chemistry

Analyte

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1	1.0	0.60	ug/L			09/23/21 18:47	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 18:47	1
1,2-Dichloroethane	ND	*1	1.0	0.57	ug/L			09/23/21 18:47	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 18:47	1
Chloroform	ND	*1	1.0	0.60	ug/L			09/23/21 18:47	1
cis-1,2-Dichloroethene	ND	*+ *1	1.0	0.71	ug/L			09/23/21 18:47	1
Methylene Chloride	ND	*1	1.0	0.89	ug/L			09/23/21 18:47	1
Trichloroethene	ND	*1	1.0	0.69	ug/L			09/23/21 18:47	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 18:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		34 - 150					09/23/21 18:47	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/23/21 18:47	1
Dibromofluoromethane (Surr)	102		49 - 145					09/23/21 18:47	1
Toluene-d8 (Surr)	99		51 - 137					09/23/21 18:47	1

Eurofins TestAmerica, Pittsburgh

Page 21 of 43

Matrix: Water

Dil Fac

Analyzed

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW14(091521)

Lab Sample ID: 180-127160-14 Date Collected: 09/15/21 08:00 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1	1.0	0.60	ug/L			09/23/21 19:16	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 19:16	1
1,2-Dichloroethane	ND	*1	1.0	0.57	ug/L			09/23/21 19:16	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 19:16	1
Chloroform	ND	*1	1.0	0.60	ug/L			09/23/21 19:16	1
cis-1,2-Dichloroethene	ND	*+ *1	1.0	0.71	ug/L			09/23/21 19:16	1
Methylene Chloride	ND	*1	1.0	0.89	ug/L			09/23/21 19:16	1
Trichloroethene	ND	*1	1.0	0.69	ug/L			09/23/21 19:16	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 19:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		34 - 150					09/23/21 19:16	1
4-Bromofluorobenzene (Surr)	72		43 - 131					09/23/21 19:16	1
Dibromofluoromethane (Surr)	96		49 - 145					09/23/21 19:16	1
Toluene-d8 (Surr)	94		51 - 137					09/23/21 19:16	1

Client Sample ID: MW18(091521)24 Lab Sample ID: 180-127160-15 **Matrix: Water**

Date Collected: 09/15/21 09:30

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 15:23	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 15:23	1
1,2-Dichloroethane	0.82	J	1.0	0.57	ug/L			09/25/21 15:23	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 15:23	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 15:23	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 15:23	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 15:23	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 15:23	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			34 - 150					09/25/21 15:23	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/25/21 15:23	1
Dibromofluoromethane (Surr)	105		49 - 145					09/25/21 15:23	1
Toluene-d8 (Surr)	109		51 - 137					09/25/21 15:23	1
Method: EPA 300.0 R2.1 - A	nions, Ion Ch	romatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	16		1.0	0.76	mg/L			09/26/21 08:04	1
Method: EPA 6020B - Metal	s (ICP/MS) - To	otal Recov	erable						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11000		50	20	ug/L		10/01/21 10:03	10/02/21 10:29	1
Method: EPA 6020B - Metal	s (ICP/MS) - D	issolved							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	57		50	20	ug/L		09/30/21 13:51	10/02/21 15:46	

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID: 180-127160-15 Client Sample ID: MW18(091521)24

Date Collected: 09/15/21 09:30 **Matrix: Water**

Date Received: 09/16/21 09:30

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.2		1.0	0.51	mg/L			10/04/21 15:45	1

Client Sample ID: MW20DI(091521)

Lab Sample ID: 180-127160-16 Date Collected: 09/15/21 09:10 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 15:44	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 15:44	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 15:44	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 15:44	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 15:44	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 15:44	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 15:44	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 15:44	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 15:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		34 - 150			-		09/25/21 15:44	1
4-Bromofluorobenzene (Surr)	81		43 - 131					09/25/21 15:44	1
Dibromofluoromethane (Surr)	123		49 - 145					09/25/21 15:44	1
Toluene-d8 (Surr)	118		51 - 137					09/25/21 15:44	1

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	22	1.0	0.76	mg/L			09/26/21 08:22	1
Method: EPA 6020B - Met	als (ICP/MS) - Total Recover	rable						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	28000	50	20	ug/L		10/01/21 10:03	10/02/21 10:32	1
Method: EPA 6020B - Met	als (ICP/MS) - Dissolved							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16000	50	20	ug/L		09/30/21 13:51	10/02/21 15:50	1
General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: MW22D(091421) Lab Sample ID: 180-127160-17

1.0

0.51 mg/L

0.91 J

Date Collected: 09/14/21 12:55 Date Received: 09/16/21 09:30

Total Organic Carbon - Quad

Method: EPA 8260D - Volat	tile Organic Compounds	by GC/MS						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			09/25/21 16:06	1
1,1,2-Trichloroethane	ND	1.0	0.45	ug/L			09/25/21 16:06	1
1,2-Dichloroethane	0.59 J	1.0	0.57	ug/L			09/25/21 16:06	1
Chloroethane	ND	1.0	0.90	ug/L			09/25/21 16:06	1
Chloroform	ND	1.0	0.60	ug/L			09/25/21 16:06	1
cis-1,2-Dichloroethene	ND	1.0	0.71	ug/L			09/25/21 16:06	1

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10/04/21 16:10

Matrix: Water

Page 23 of 43

Client Sample ID: MW22D(091421)

Lab Sample ID: 180-127160-17

Date Collected: 09/14/21 12:55 Date Received: 09/16/21 09:30

Job ID: 180-127160-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 16:06	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 16:06	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 16:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		34 - 150					09/25/21 16:06	1
4-Bromofluorobenzene (Surr)	77		43 - 131					09/25/21 16:06	1
Dibromofluoromethane (Surr)	96		49 - 145					09/25/21 16:06	1
Toluene-d8 (Surr)	95		51 - 137					09/25/21 16:06	

Lab Sample ID: 180-127160-18 Client Sample ID: MW23(091521)40 **Matrix: Water**

Date Collected: 09/15/21 08:30 Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 16:27	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 16:27	1
1,2-Dichloroethane	13		1.0	0.57	ug/L			09/25/21 16:27	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 16:27	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 16:27	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 16:27	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 16:27	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 16:27	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 16:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		34 - 150					09/25/21 16:27	1
4-Bromofluorobenzene (Surr)	75		43 - 131					09/25/21 16:27	1
Dibromofluoromethane (Surr)	107		49 - 145					09/25/21 16:27	1
Toluene-d8 (Surr)	120		51 - 137					09/25/21 16:27	1
Method: EPA 300.0 R2.1 - A	nione Ion Chi	romatogra	nhv						
	anions, ion om	umatugra	pily						
Analyte	•	Qualifier	PHY RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	•	_			Unit mg/L	<u>D</u>	Prepared	Analyzed 09/26/21 08:40	Dil Fac
Analyte Sulfate	Result 52	Qualifier	1.0			<u>D</u>	Prepared		Dil Fac
Analyte	Result 52	Qualifier	1.0		mg/L	<u>D</u>	Prepared Prepared		Dil Fac
Analyte Sulfate Method: EPA 6020B - Meta	Result 52	Qualifier otal Recov	RL 1.0	0.76	mg/L			09/26/21 08:40	1
Analyte Sulfate Method: EPA 6020B - Metal Analyte	Result	Qualifier otal Recov Qualifier	RL 1.0	0.76	mg/L Unit		Prepared	09/26/21 08:40 Analyzed	1
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron	Result	Qualifier otal Recov Qualifier	RL 1.0	0.76	mg/L Unit ug/L		Prepared	09/26/21 08:40 Analyzed	Dil Fac
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal	Result	Qualifier otal Recov Qualifier	RL 1.0 erable RL 50	0.76 MDL 20	mg/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36	Dil Fac
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte	Result 52 Is (ICP/MS) - To Result 14000 Is (ICP/MS) - D Result	Qualifier otal Recov Qualifier	RL 1.0 erable RL 50 RL	0.76 MDL 20	mg/L Unit ug/L Unit	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36 Analyzed	Dil Fac
Analyte Sulfate Method: EPA 6020B - Meta Analyte Iron Method: EPA 6020B - Meta Analyte Iron, Dissolved	Result 52 Is (ICP/MS) - To Result 14000 Is (ICP/MS) - D Result 11000	Qualifier otal Recov Qualifier	RL 1.0 erable RL 50 RL	0.76 MDL 20	mg/L Unit ug/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36 Analyzed	Dil Fac Dil Fac

Client Sample ID: DUP01(091421)

Date Collected: 09/14/21 12:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-19

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/27/21 12:30	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/27/21 12:30	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/27/21 12:30	1
Chloroethane	ND		1.0	0.90	ug/L			09/27/21 12:30	1
Chloroform	ND		1.0	0.60	ug/L			09/27/21 12:30	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/27/21 12:30	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/27/21 12:30	1
Trichloroethene	ND		1.0	0.69	ug/L			09/27/21 12:30	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/27/21 12:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		34 - 150					09/27/21 12:30	1
4-Bromofluorobenzene (Surr)	72		43 - 131					09/27/21 12:30	1
Dibromofluoromethane (Surr)	96		49 - 145					09/27/21 12:30	1
Toluene-d8 (Surr)	113		51 - 137					09/27/21 12:30	

Client Sample ID: DUP02(091421)

Date Collected: 09/14/21 13:00

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-20

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.2	ug/L			09/27/21 10:43	2
1,1,2-Trichloroethane	ND		2.0	0.91	ug/L			09/27/21 10:43	2
1,2-Dichloroethane	38		2.0	1.1	ug/L			09/27/21 10:43	2
Chloroethane	ND		2.0	1.8	ug/L			09/27/21 10:43	2
Chloroform	ND		2.0	1.2	ug/L			09/27/21 10:43	2
cis-1,2-Dichloroethene	ND		2.0	1.4	ug/L			09/27/21 10:43	2
Methylene Chloride	45		2.0	1.8	ug/L			09/27/21 10:43	2
Trichloroethene	2.3		2.0	1.4	ug/L			09/27/21 10:43	2
Vinyl chloride	110	E	2.0	0.81	ug/L			09/27/21 10:43	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		34 - 150					09/27/21 10:43	2
4-Bromofluorobenzene (Surr)	81		43 - 131					09/27/21 10:43	2
Dibromofluoromethane (Surr)	106		49 - 145					09/27/21 10:43	2
Toluene-d8 (Surr)	119		51 - 137					09/27/21 10:43	2

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	5.0	3.0	ug/L			09/27/21 12:08	5
1,1,2-Trichloroethane	ND	5.0	2.3	ug/L			09/27/21 12:08	5
1,2-Dichloroethane	36	5.0	2.9	ug/L			09/27/21 12:08	5
Chloroethane	ND	5.0	4.5	ug/L			09/27/21 12:08	5
Chloroform	ND	5.0	3.0	ug/L			09/27/21 12:08	5
cis-1,2-Dichloroethene	ND	5.0	3.5	ug/L			09/27/21 12:08	5
Methylene Chloride	36	5.0	4.4	ug/L			09/27/21 12:08	5
Trichloroethene	ND	5.0	3.4	ug/L			09/27/21 12:08	5
Vinyl chloride	81	5.0	2.0	ug/L			09/27/21 12:08	5

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: DUP02(091421)

Date Collected: 09/14/21 13:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-20

Matrix: Water

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101	34 - 150	09/27/21 12:08	5
4-Bromofluorobenzene (Surr)	76	43 - 131	09/27/21 12:08	5
Dibromofluoromethane (Surr)	97	49 - 145	09/27/21 12:08	5
Toluene-d8 (Surr)	110	51 - 137	09/27/21 12:08	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.0		1.0	0.76	mg/L			09/25/21 15:42	1

Method: EPA 6020B - Metals (I	ICP/MS) - To	tal Recoverabl	е						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4500		50	20	ug/L		10/01/21 10:03	10/02/21 10:40	1

Method: EPA 6020B - Metals ((ICP/MS) - Dis	solved							
Analyte	Result Q	ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	ND		50	20	ug/L		09/30/21 13:51	10/02/21 15:57	1

General Chemistry									
Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.3		1.0	0.51	mg/L			09/30/21 01:57	1

Lab Sample ID: 180-127160-21 **Client Sample ID: TRIP BLANK** Date Collected: 09/14/21 00:00 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 14:40	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 14:40	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 14:40	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 14:40	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 14:40	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 14:40	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 14:40	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 14:40	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1 2-Dichloroethane-d4 (Surr)	113		34 150					09/25/21 14:40	

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyz	ed:	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		34 - 150	09/25/21	14:40	1
4-Bromofluorobenzene (Surr)	79		43 - 131	09/25/21	14:40	1
Dibromofluoromethane (Surr)	107		49 - 145	09/25/21	14:40	1
Toluene-d8 (Surr)	117		51 - 137	09/25/21	14:40	1

Lab Sample ID: 180-127160-22 Client Sample ID: MW23(091521)47 **Matrix: Water**

Date Collected: 09/15/21 08:40 Date Received: 09/16/21 09:30

Method: EPA 8260D - Vola	atile Organic Compounds by	y GC/MS						
Analyte	Result Qualifier	RL	MDL Un	nit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60 ug	/L			09/25/21 17:10	1
1,1,2-Trichloroethane	ND	1.0	0.45 ug	/L			09/25/21 17:10	1
1.2-Dichloroethane	14	1.0	0.57 ug	/L			09/25/21 17:10	1

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Page 26 of 43

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW23(091521)47

Lab Sample ID: 180-127160-22

Date Collected: 09/15/21 08:40 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 17:10	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 17:10	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 17:10	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 17:10	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 17:10	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		34 - 150					09/25/21 17:10	1
4-Bromofluorobenzene (Surr)	81		43 - 131					09/25/21 17:10	1
Dibromofluoromethane (Surr)	113		49 - 145					09/25/21 17:10	1
Toluene-d8 (Surr)	115		51 - 137					09/25/21 17:10	1
Method: EPA 300.0 R2.1 - A	Anions, Ion Ch	romatogra	phy						
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
0.15.4				IVIDE	•	U		Allalyzeu	DII Fac
Sulfate	51		1.0		mg/L			09/26/21 08:58	1 1
- T T T T T T T T T T T T T T T T T T T		otal Recov							
Sulfate : Method: EPA 6020B - Metal Analyte	ls (ICP/MS) - To	otal Recov			mg/L		Prepared		
Method: EPA 6020B - Metal	ls (ICP/MS) - To		erable	0.76	mg/L			09/26/21 08:58	1
Method: EPA 6020B - Metal Analyte Iron	Is (ICP/MS) - To Result 11000	Qualifier	erable RL	0.76	mg/L Unit		Prepared	09/26/21 08:58 Analyzed	1 Dil Fac
Method: EPA 6020B - Metal Analyte	Is (ICP/MS) - To Result 11000	Qualifier	erable RL	0.76	mg/L Unit ug/L		Prepared	09/26/21 08:58 Analyzed	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal	Is (ICP/MS) - To Result 11000	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte	Is (ICP/MS) - To Result 11000 Is (ICP/MS) - D Result	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L Unit	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43 Analyzed	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte Iron, Dissolved	Is (ICP/MS) - To Result 11000 Is (ICP/MS) - D Result 9700	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43 Analyzed	1 Dil Fac

Client Sample ID: MW18(091521)31 Lab Sample ID: 180-127160-23

Date Collected: 09/15/21 09:40 Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 17:32	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 17:32	1
1,2-Dichloroethane	1.1		1.0	0.57	ug/L			09/25/21 17:32	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 17:32	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 17:32	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 17:32	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 17:32	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 17:32	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		34 - 150					09/25/21 17:32	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/25/21 17:32	1
Dibromofluoromethane (Surr)	107		49 - 145					09/25/21 17:32	1
Toluene-d8 (Surr)	109		51 - 137					09/25/21 17:32	1

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Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW18(091521)31 Lab Sample ID: 180-127160-23

Date Collected: 09/15/21 09:40 **Matrix: Water**

Date Received: 09/16/21 09:30

Method: EPA 300.0 R2.1 - Anio		•	•	MDI	11-24	_	D	A I	D!! = -
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	15		1.0	0.76	mg/L			09/26/21 09:16	1
Method: EPA 6020B - Metals (ICP/MS) - To	otal Recover	able						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	18000		50	20	ug/L		10/01/21 10:03	10/02/21 10:47	1
Method: EPA 6020B - Metals (CP/MS) - D	issolved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	47	J	50	20	ug/L		09/30/21 14:16	10/02/21 16:10	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

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Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 180-372540/11

Matrix: Water

Analysis Batch: 372540

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB MB							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	1.0	0.60	ug/L			09/23/21 12:59	1
1,1,2-Trichloroethane	ND	1.0	0.45	ug/L			09/23/21 12:59	1
1,2-Dichloroethane	ND	1.0	0.57	ug/L			09/23/21 12:59	1
Chloroethane	ND	1.0	0.90	ug/L			09/23/21 12:59	1
Chloroform	ND	1.0	0.60	ug/L			09/23/21 12:59	1
cis-1,2-Dichloroethene	ND	1.0	0.71	ug/L			09/23/21 12:59	1
Methylene Chloride	ND	1.0	0.89	ug/L			09/23/21 12:59	1
Trichloroethene	ND	1.0	0.69	ug/L			09/23/21 12:59	1
Vinyl chloride	ND	1.0	0.41	ug/L			09/23/21 12:59	1

MB MB

Surrogate	%Recovery Quality	ifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80	34 - 150		09/23/21 12:59	1
4-Bromofluorobenzene (Surr)	71	43 - 131		09/23/21 12:59	1
Dibromofluoromethane (Surr)	84	49 - 145		09/23/21 12:59	1
Toluene-d8 (Surr)	52	51 - 137		09/23/21 12:59	1

Lab Sample ID: LCS 180-372540/3

Matrix: Water

Analysis Batch: 372540

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	11.9		ug/L		119	61 - 137	
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	70 - 121	
1,2-Dichloroethane	10.0	12.1		ug/L		121	61 - 136	
Chloroethane	10.0	8.46		ug/L		85	25 - 150	
Chloroform	10.0	12.0		ug/L		120	67 - 129	
cis-1,2-Dichloroethene	10.0	13.0	*+	ug/L		130	68 - 124	
Methylene Chloride	10.0	9.92		ug/L		99	53 - 139	
Trichloroethene	10.0	11.1		ug/L		111	64 - 128	
Vinyl chloride	10.0	5.87		ug/L		59	40 - 149	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	128		34 - 150
4-Bromofluorobenzene (Surr)	96		43 - 131
Dibromofluoromethane (Surr)	144		49 - 145
Toluene-d8 (Surr)	109		51 - 137

Lab Sample ID: LCSD 180-372540/6

Matrix: Water

Analysis Batch: 372540

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane	10.0	7.76	*1	ug/L		78	61 - 137	42	24
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	70 - 121	0	28
1,2-Dichloroethane	10.0	8.40	*1	ug/L		84	61 - 136	36	27
Chloroethane	10.0	6.41		ug/L		64	25 - 150	28	33
Chloroform	10.0	7.61	*1	ug/L		76	67 - 129	45	24
cis-1,2-Dichloroethene	10.0	8.73	*1	ug/L		87	68 - 124	39	23

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Page 29 of 43 10/6/2021

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 180-372540/6

Matrix: Water

Analysis Batch: 372540

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

LCSD LCSD RPD Spike %Rec. Added Result Qualifier Unit D %Rec Limits RPD Limit 6.96 *1 Methylene Chloride 10.0 ug/L 70 53 - 139 35 30 Trichloroethene 10.0 8.00 *1 ug/L 80 64 - 128 32 23 Vinyl chloride 10.0 4.11 ug/L 41 40 - 149 35 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		34 - 150
4-Bromofluorobenzene (Surr)	82		43 - 131
Dibromofluoromethane (Surr)	85		49 - 145
Toluene-d8 (Surr)	100		51 - 137

Lab Sample ID: MB 180-372888/4 **Client Sample ID: Method Blank Matrix: Water**

Analysis Batch: 372888

Prep Type: Total/NA

10

	MB N	ИB							
Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND		1.0	0.60	ug/L			09/25/21 11:26	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 11:26	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 11:26	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 11:26	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 11:26	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 11:26	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 11:26	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 11:26	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 11:26	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		34 - 150	 	09/25/21 11:26	1
4-Bromofluorobenzene (Surr)	87		43 - 131		09/25/21 11:26	1
Dibromofluoromethane (Surr)	89		49 - 145		09/25/21 11:26	1
Toluene-d8 (Surr)	97		51 - 137		09/25/21 11:26	1

Lab Sample ID: LCS 180-372888/3

Matrix: Water

Analysis Batch: 372888

Client Sample ID: Lab Control Sample Prep Type: Total/NA

•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1-Trichloroethane	10.0	9.98		ug/L		100	61 - 137
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 121
1,2-Dichloroethane	10.0	9.73		ug/L		97	61 - 136
Chloroethane	10.0	8.03		ug/L		80	25 - 150
Chloroform	10.0	10.0		ug/L		100	67 - 129
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	68 - 124
Methylene Chloride	10.0	9.76		ug/L		98	53 - 139
Trichloroethene	10.0	9.60		ug/L		96	64 - 128
Vinyl chloride	10.0	9.76		ug/L		98	40 - 149

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96	34 - 150

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Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 180-372888/3

Matrix: Water

Analysis Batch: 372888

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		43 - 131
Dibromofluoromethane (Surr)	97		49 - 145
Toluene-d8 (Surr)	105		51 - 137

Lab Sample ID: 180-127160-5 MS Client Sample ID: MW12D(091421)

Matrix: Water

Analysis Batch: 372888

Prep Type: Total/NA

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 10.0 1,1,1-Trichloroethane ND 9.72 ug/L 97 61 - 1371,1,2-Trichloroethane ND 10.0 12.0 ug/L 120 70 - 121 1,2-Dichloroethane ND 10.0 10.7 ug/L 107 61 - 136 Chloroethane ND F2 10.0 4.11 ug/L 41 25 - 150 Chloroform 9.98 100 ND 10.0 ug/L 67 - 129cis-1,2-Dichloroethene ND 10.0 10.2 102 68 - 124 ug/L Methylene Chloride ND 10.0 7.97 ug/L 80 53 - 139 Trichloroethene ND 10.0 9.90 ug/L 99 64 - 128 Vinyl chloride ND 10.0 88 8.81 ug/L 40 - 149

MS MS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		34 - 150
4-Bromofluorobenzene (Surr)	102		43 - 131
Dibromofluoromethane (Surr)	104		49 - 145
Toluene-d8 (Surr)	112		51 - 137

Client Sample ID: MW12D(091421) Lab Sample ID: 180-127160-5 MSD Prep Type: Total/NA

Matrix: Water

Analysis Batch: 372888

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
1,1,1-Trichloroethane	ND		10.0	9.17		ug/L		92	61 - 137	6	24	
1,1,2-Trichloroethane	ND		10.0	11.5		ug/L		115	70 - 121	5	28	
1,2-Dichloroethane	ND		10.0	9.94		ug/L		99	61 - 136	7	27	
Chloroethane	ND	F2	10.0	2.53	F2	ug/L		25	25 - 150	47	33	
Chloroform	ND		10.0	9.30		ug/L		93	67 - 129	7	24	
cis-1,2-Dichloroethene	ND		10.0	9.36		ug/L		94	68 - 124	8	23	
Methylene Chloride	ND		10.0	7.56		ug/L		76	53 - 139	5	30	
Trichloroethene	ND		10.0	9.04		ug/L		90	64 - 128	9	23	
Vinyl chloride	ND		10.0	8.41		ug/L		84	40 - 149	5	35	

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		34 - 150
4-Bromofluorobenzene (Surr)	94		43 - 131
Dibromofluoromethane (Surr)	95		49 - 145
Toluene-d8 (Surr)	100		51 - 137

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Page 31 of 43

Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-372936/8

Matrix: Water

Analysis Batch: 372936

Client: ARCADIS U.S., Inc.

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/27/21 10:00	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/27/21 10:00	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/27/21 10:00	1
Chloroethane	ND		1.0	0.90	ug/L			09/27/21 10:00	1
Chloroform	ND		1.0	0.60	ug/L			09/27/21 10:00	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/27/21 10:00	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/27/21 10:00	1
Trichloroethene	ND		1.0	0.69	ug/L			09/27/21 10:00	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/27/21 10:00	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		34 - 150	-		09/27/21 10:00	1
4-Bromofluorobenzene (Surr)	85		43 - 131			09/27/21 10:00	1
Dibromofluoromethane (Surr)	97		49 - 145			09/27/21 10:00	1
Toluene-d8 (Surr)	110		51 - 137			09/27/21 10:00	1

Lab Sample ID: LCS 180-372936/3

Matrix: Water

Analysis Batch: 372936

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	9.09		ug/L		91	61 - 137	
1,1,2-Trichloroethane	10.0	11.7		ug/L		117	70 - 121	
1,2-Dichloroethane	10.0	9.07		ug/L		91	61 - 136	
Chloroethane	10.0	7.86		ug/L		79	25 - 150	
Chloroform	10.0	9.42		ug/L		94	67 - 129	
cis-1,2-Dichloroethene	10.0	8.91		ug/L		89	68 - 124	
Methylene Chloride	10.0	9.12		ug/L		91	53 - 139	
Trichloroethene	10.0	8.26		ug/L		83	64 - 128	
Vinyl chloride	10.0	9.00		ug/L		90	40 - 149	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		34 - 150
4-Bromofluorobenzene (Surr)	100		43 - 131
Dibromofluoromethane (Surr)	93		49 - 145
Toluene-d8 (Surr)	106		51 - 137

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-372885/20

Matrix: Water

Analyte

Sulfate

Analysis Batch: 372885

Client Sample ID: Method Blank Prep Type: Total/NA

MB MB RL **MDL** Unit Result Qualifier Prepared Analyzed Dil Fac ND 1.0 0.76 mg/L 09/25/21 13:19

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Page 32 of 43

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample

Client Sample ID: MW27(091521)

Client Sample ID: MW27(091521)

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 180-372885/56

Matrix: Water

Analysis Batch: 372885

MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte D Prepared 1.0 09/26/21 00:02 Sulfate ND 0.76 mg/L

Lab Sample ID: LCS 180-372885/19

Matrix: Water

Analysis Batch: 372885

Spike LCS LCS %Rec. Added Result Qualifier D %Rec Limits Analyte Unit 50.0 47.5 90 - 110 Sulfate mg/L 95

Lab Sample ID: LCS 180-372885/55

Matrix: Water

Analysis Batch: 372885

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit %Rec Sulfate 50.0 102 90 - 110 51 1 mg/L

Lab Sample ID: 180-127160-10 MS

Matrix: Water

Analysis Batch: 372885

Spike MS MS %Rec. Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Sulfate 2.1 50.0 52.6 mg/L 101 90 - 110

Lab Sample ID: 180-127160-10 MSD

Matrix: Water

Analysis Batch: 372885

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Limit Sulfate 2.1 50.0 51.8 99 mg/L 90 - 110 20

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-373358/1-A

Matrix: Water

Analysis Batch: 373752

Prep Type: Total Recoverable

Prep Batch: 373358

MDL Unit Analyte Result Qualifier RL Prepared Analyzed 20 ug/L 50 09/29/21 13:44 10/01/21 10:27

Lab Sample ID: LCS 180-373358/2-A

Matrix: Water

Iron

Analysis Batch: 373752

LCS LCS Spike Added

MR MR

ND

Prep Type: Total Recoverable Prep Batch: 373358 %Rec.

Client Sample ID: Lab Control Sample

Analyte Result Qualifier Unit %Rec Limits 5000 5010 Iron ug/L 100 80 - 120

Eurofins TestAmerica, Pittsburgh

10

10/6/2021

Dil Fac

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-373520/1-A

Matrix: Water

Analyte

Analyte

Iron

Iron

Analysis Batch: 373978

Client Sample ID: Method Blank **Prep Type: Total Recoverable Prep Batch: 373520** MB MB

Unit

ug/L

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 50 09/30/21 13:42 10/02/21 12:56 ND 20 ug/L

Lab Sample ID: LCS 180-373520/2-A

Matrix: Water

Analysis Batch: 373978

Spike Added 5000

RL

RL

50

RL

50

Lab Sample ID: MB 180-373527/1-A

Matrix: Water

Analysis Batch: 373978

MB MB

MR MR

LB LB

ND

Result Qualifier

Analyte Result Qualifier Iron, Dissolved

 $\overline{\mathsf{ND}}$

50

Spike

Added

5000

Spike

Added

5000

MDL Unit 20 ug/L

LCS LCS

5250

Result Qualifier

MDL Unit

LCS LCS

5220

Result Qualifier

MDL Unit

20 ug/L

20 ug/L

LCS LCS

5200

Result Qualifier

Unit

ug/L

Unit

ug/L

D %Rec

104

Prepared

D %Rec

104

Lab Sample ID: LCS 180-373527/2-A

Matrix: Water

Analysis Batch: 373978

Analyte Iron. Dissolved

Iron

Lab Sample ID: MB 180-373655/1-A **Matrix: Water**

Analysis Batch: 373977

Analyte

Lab Sample ID: LCS 180-373655/2-A

Matrix: Water Analysis Batch: 373977

Analyte Iron

Lab Sample ID: LB 180-371949/1-B **Matrix: Water**

Analysis Batch: 373978

Analyte Iron, Dissolved

Result Qualifier ND

Client Sample ID: Method Blank Prep Type: Total Recoverable

%Rec.

Limits

80 - 120

Prep Type: Total Recoverable

Prep Batch: 373520

Prep Batch: 373527

Analyzed Dil Fac 09/30/21 13:51 10/02/21 14:20

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Prep Batch: 373527 %Rec.

%Rec Limits 80 - 120 105

Client Sample ID: Method Blank **Prep Type: Total Recoverable**

Prep Batch: 373655

Prepared Analyzed Dil Fac 10/01/21 10:03 10/02/21 09:49

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 373655 %Rec.

Limits

Client Sample ID: Method Blank

80 - 120

Prep Type: Dissolved Prep Batch: 373527

Analyzed Dil Fac Prepared 09/30/21 13:51 10/02/21 14:23

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10

Job ID: 180-127160-1

Method: EPA 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 180-373531/6

Matrix: Water

Analysis Batch: 373531

MB MB

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte Prepared 1.0 09/29/21 19:53 Total Organic Carbon - Quad ND 0.51 mg/L

Lab Sample ID: LCS 180-373531/4

Matrix: Water

Analysis Batch: 373531

Spike LCS LCS Added Result Qualifier D %Rec Limits Unit 20.0 85 - 115 Total Organic Carbon - Quad 19.6 mg/L 98

Lab Sample ID: LCSD 180-373531/5

Matrix: Water

Analysis Batch: 373531

Spike LCSD LCSD %Rec. Added Result Qualifier Limits **RPD** Analyte Unit %Rec Total Organic Carbon - Quad 20.0 19.3 97 mg/L

RL

1.0

MDL Unit

0.51 mg/L

Lab Sample ID: MB 180-374039/6

Matrix: Water

Analysis Batch: 374039

MB MB

Analyte Result Qualifier

Total Organic Carbon - Quad $\overline{\mathsf{ND}}$

Lab Sample ID: LCS 180-374039/4

Matrix: Water

Analysis Batch: 374039

LCS LCS Spike Added Limits Analyte Result Qualifier Unit %Rec Total Organic Carbon - Quad 20.0 19.5 98 85 - 115 mg/L

Lab Sample ID: LCSD 180-374039/5

Matrix: Water

Analysis Batch: 374039

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Limits **RPD** Limit Analyte Unit %Rec D 20.0 Total Organic Carbon - Quad 19.5 mg/L 97 85 - 115

Client Sample ID: Method Blank

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

%Rec.

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

RPD Limit

Client Sample ID: Method Blank

Dil Fac

Prep Type: Total/NA

Analyzed

10/04/21 14:24

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

%Rec.

Prepared

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

20

Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1 Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 372540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-8	MW16(091421)	Total/NA	Water	EPA 8260D	
180-127160-9	MW25I(091421)	Total/NA	Water	EPA 8260D	
180-127160-10	MW27(091521)	Total/NA	Water	EPA 8260D	
180-127160-11	MW28D(091421)	Total/NA	Water	EPA 8260D	
180-127160-12	MW3(091421)	Total/NA	Water	EPA 8260D	
180-127160-13	MW8D(091421)	Total/NA	Water	EPA 8260D	
180-127160-14	MW14(091521)	Total/NA	Water	EPA 8260D	
MB 180-372540/11	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-372540/3	Lab Control Sample	Total/NA	Water	EPA 8260D	
LCSD 180-372540/6	Lab Control Sample Dup	Total/NA	Water	EPA 8260D	

Analysis Batch: 372888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-1	MW4(091421)	Total/NA	Water	EPA 8260D	
180-127160-2	MW8S(091421)	Total/NA	Water	EPA 8260D	
180-127160-3	MW12S(091421)	Total/NA	Water	EPA 8260D	
180-127160-5	MW12D(091421)	Total/NA	Water	EPA 8260D	
180-127160-6	MW13D(091421)	Total/NA	Water	EPA 8260D	
180-127160-7	MW14I(091521)	Total/NA	Water	EPA 8260D	
180-127160-11 - DL	MW28D(091421)	Total/NA	Water	EPA 8260D	
180-127160-15	MW18(091521)24	Total/NA	Water	EPA 8260D	
180-127160-16	MW20DI(091521)	Total/NA	Water	EPA 8260D	
180-127160-17	MW22D(091421)	Total/NA	Water	EPA 8260D	
180-127160-18	MW23(091521)40	Total/NA	Water	EPA 8260D	
180-127160-21	TRIP BLANK	Total/NA	Water	EPA 8260D	
180-127160-22	MW23(091521)47	Total/NA	Water	EPA 8260D	
180-127160-23	MW18(091521)31	Total/NA	Water	EPA 8260D	
MB 180-372888/4	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-372888/3	Lab Control Sample	Total/NA	Water	EPA 8260D	
180-127160-5 MS	MW12D(091421)	Total/NA	Water	EPA 8260D	
180-127160-5 MSD	MW12D(091421)	Total/NA	Water	EPA 8260D	

Analysis Batch: 372936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-4	MW6I(091521)	Total/NA	Water	EPA 8260D	
180-127160-19	DUP01(091421)	Total/NA	Water	EPA 8260D	
180-127160-20	DUP02(091421)	Total/NA	Water	EPA 8260D	
180-127160-20 - DL	DUP02(091421)	Total/NA	Water	EPA 8260D	
MB 180-372936/8	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-372936/3	Lab Control Sample	Total/NA	Water	EPA 8260D	

HPLC/IC

Analysis Batch: 372885

Lab Sample ID 180-127160-7	Client Sample ID MW14I(091521)	Prep Type Total/NA	Matrix Water	Method EPA 300.0 R2.1	Prep Batch
180-127160-8	MW16(091421)	Total/NA	Water	EPA 300.0 R2.1	
180-127160-10	MW27(091521)	Total/NA	Water	EPA 300.0 R2.1	
180-127160-12	MW3(091421)	Total/NA	Water	EPA 300.0 R2.1	
180-127160-15	MW18(091521)24	Total/NA	Water	EPA 300.0 R2.1	
180-127160-16	MW20DI(091521)	Total/NA	Water	EPA 300.0 R2.1	

Eurofins TestAmerica, Pittsburgh

Page 36 of 43

QC Association Summary

Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

HPLC/IC (Continued)

Analysis Batch: 372885 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-18	MW23(091521)40	Total/NA	Water	EPA 300.0 R2.1	
180-127160-20	DUP02(091421)	Total/NA	Water	EPA 300.0 R2.1	
180-127160-22	MW23(091521)47	Total/NA	Water	EPA 300.0 R2.1	
180-127160-23	MW18(091521)31	Total/NA	Water	EPA 300.0 R2.1	
MB 180-372885/20	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 180-372885/56	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-372885/19	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-372885/55	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-127160-10 MS	MW27(091521)	Total/NA	Water	EPA 300.0 R2.1	
180-127160-10 MSD	MW27(091521)	Total/NA	Water	EPA 300.0 R2.1	

Metals

Filtration Batch: 371949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Dissolved	Water	FILTRATION	
180-127160-8	MW16(091421)	Dissolved	Water	FILTRATION	
180-127160-10	MW27(091521)	Dissolved	Water	FILTRATION	
180-127160-12	MW3(091421)	Dissolved	Water	FILTRATION	
180-127160-15	MW18(091521)24	Dissolved	Water	FILTRATION	
180-127160-16	MW20DI(091521)	Dissolved	Water	FILTRATION	
180-127160-18	MW23(091521)40	Dissolved	Water	FILTRATION	
180-127160-20	DUP02(091421)	Dissolved	Water	FILTRATION	
180-127160-22	MW23(091521)47	Dissolved	Water	FILTRATION	
180-127160-23	MW18(091521)31	Dissolved	Water	FILTRATION	
LB 180-371949/1-B	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 373358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Total Recoverable	Water	3005A	
180-127160-8	MW16(091421)	Total Recoverable	Water	3005A	
180-127160-10	MW27(091521)	Total Recoverable	Water	3005A	
MB 180-373358/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-373358/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 373520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-12	MW3(091421)	Total Recoverable	Water	3005A	
MB 180-373520/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-373520/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 373527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Dissolved	Water	3005A	371949
180-127160-8	MW16(091421)	Dissolved	Water	3005A	371949
180-127160-10	MW27(091521)	Dissolved	Water	3005A	371949
180-127160-12	MW3(091421)	Dissolved	Water	3005A	371949
180-127160-15	MW18(091521)24	Dissolved	Water	3005A	371949
180-127160-16	MW20DI(091521)	Dissolved	Water	3005A	371949
180-127160-18	MW23(091521)40	Dissolved	Water	3005A	371949
180-127160-20	DUP02(091421)	Dissolved	Water	3005A	371949

Eurofins TestAmerica, Pittsburgh

10/6/2021

Page 37 of 43

2

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QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Metals (Continued)

Prep Batch: 373527 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-22	MW23(091521)47	Dissolved	Water	3005A	371949
180-127160-23	MW18(091521)31	Dissolved	Water	3005A	371949
LB 180-371949/1-B	Method Blank	Dissolved	Water	3005A	371949
MB 180-373527/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-373527/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 373655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-15	MW18(091521)24	Total Recoverable	Water	3005A	_
180-127160-16	MW20DI(091521)	Total Recoverable	Water	3005A	
180-127160-18	MW23(091521)40	Total Recoverable	Water	3005A	
180-127160-20	DUP02(091421)	Total Recoverable	Water	3005A	
180-127160-22	MW23(091521)47	Total Recoverable	Water	3005A	
180-127160-23	MW18(091521)31	Total Recoverable	Water	3005A	
MB 180-373655/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-373655/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 373752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Total Recoverable	Water	EPA 6020B	373358
180-127160-8	MW16(091421)	Total Recoverable	Water	EPA 6020B	373358
180-127160-10	MW27(091521)	Total Recoverable	Water	EPA 6020B	373358
MB 180-373358/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	373358
LCS 180-373358/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	373358

Analysis Batch: 373977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-15	MW18(091521)24	Total Recoverable	Water	EPA 6020B	373655
180-127160-16	MW20DI(091521)	Total Recoverable	Water	EPA 6020B	373655
180-127160-18	MW23(091521)40	Total Recoverable	Water	EPA 6020B	373655
180-127160-20	DUP02(091421)	Total Recoverable	Water	EPA 6020B	373655
180-127160-22	MW23(091521)47	Total Recoverable	Water	EPA 6020B	373655
180-127160-23	MW18(091521)31	Total Recoverable	Water	EPA 6020B	373655
MB 180-373655/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	373655
LCS 180-373655/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	373655

Analysis Batch: 373978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Dissolved	Water	EPA 6020B	373527
180-127160-8	MW16(091421)	Dissolved	Water	EPA 6020B	373527
180-127160-10	MW27(091521)	Dissolved	Water	EPA 6020B	373527
180-127160-12	MW3(091421)	Dissolved	Water	EPA 6020B	373527
180-127160-12	MW3(091421)	Total Recoverable	Water	EPA 6020B	373520
180-127160-15	MW18(091521)24	Dissolved	Water	EPA 6020B	373527
180-127160-16	MW20DI(091521)	Dissolved	Water	EPA 6020B	373527
180-127160-18	MW23(091521)40	Dissolved	Water	EPA 6020B	373527
180-127160-20	DUP02(091421)	Dissolved	Water	EPA 6020B	373527
180-127160-22	MW23(091521)47	Dissolved	Water	EPA 6020B	373527
180-127160-23	MW18(091521)31	Dissolved	Water	EPA 6020B	373527
LB 180-371949/1-B	Method Blank	Dissolved	Water	EPA 6020B	373527
MB 180-373520/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	373520

Eurofins TestAmerica, Pittsburgh

Page 38 of 43 10/6/2021

2

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13

QC Association Summary

Client: ARCADIS U.S., Inc.

Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Metals (Continued)

Analysis Batch: 373978 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-373527/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	373527
LCS 180-373520/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	373520
LCS 180-373527/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	373527

General Chemistry

Analysis Batch: 373531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-8	MW16(091421)	Total/NA	Water	EPA 9060A	
180-127160-12	MW3(091421)	Total/NA	Water	EPA 9060A	
180-127160-20	DUP02(091421)	Total/NA	Water	EPA 9060A	
MB 180-373531/6	Method Blank	Total/NA	Water	EPA 9060A	
LCS 180-373531/4	Lab Control Sample	Total/NA	Water	EPA 9060A	
LCSD 180-373531/5	Lab Control Sample Dup	Total/NA	Water	EPA 9060A	

Analysis Batch: 374039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-127160-7	MW14I(091521)	Total/NA	Water	EPA 9060A	
180-127160-10	MW27(091521)	Total/NA	Water	EPA 9060A	
180-127160-15	MW18(091521)24	Total/NA	Water	EPA 9060A	
180-127160-16	MW20DI(091521)	Total/NA	Water	EPA 9060A	
180-127160-18	MW23(091521)40	Total/NA	Water	EPA 9060A	
180-127160-22	MW23(091521)47	Total/NA	Water	EPA 9060A	
180-127160-23	MW18(091521)31	Total/NA	Water	EPA 9060A	
MB 180-374039/6	Method Blank	Total/NA	Water	EPA 9060A	
LCS 180-374039/4	Lab Control Sample	Total/NA	Water	EPA 9060A	
LCSD 180-374039/5	Lab Control Sample Dup	Total/NA	Water	EPA 9060A	

10/6/2021

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Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

Ballimererofins #201

Environment Testing America

Client Information		o PM: Diussy, Jill L	Carrier Tracking No(s):	COC No: 180-72814-14117.1
Client Contact: Ms. Shwetha Sridharan	Phone: 1112 2 21 21 21 E-M		State of Origin: Mary land	Page: Page 1 of 5
Company: ARCADIS U.S., Inc.	PWSID:	Analysis Re		Job#:
Address:	Due Date Requested: Standard	ES 4542	i i i i i i i i i i i i i i i i i i i	Preservation Codes:
7550 Teague Road Suite 210 City:	TAT Requested (days):	7760		A - HCL M - Hexane B - NaOH N - None
Hanover State, Zip:	Noireal	\$260 0 0 0 0 0		C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
MD, 21076 Phone:	Compliance Project: Δ Yes Δ No	1 1 1 2 2 2 3 1 1		E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
302-897-8993(Tel)	30005455.0002.	190868		G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO #:			J - Di Water V - MCAA
Project Name: Cytec Havre de Grace MD	Project #: 18017987	CC FROM NO CONTROL OF OF OF OF OF OF OF OF OF OF OF OF OF		K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Site: Cytec	ssow#:	Sample Cike	o Containe	Other:
Cylec			1. 1 1 16	
	Sample Matrix Type (Wewster.	10 N/O		
Samula Identification	Sample C=comp, O=wasts/oil, O	音音がいクロー		
Sample Identification	Preservation Code:			
MW4(091421)	9/14/21 1130 6 W	3	180-12/160 C	chain of Custody
M4) 85 (09 14 21)	9/14/21 1320	3		
MW125(091421)	9/14/21/1045	3		
MW GT (09 15/21)	9/9/21 1240	3		
MW120 (0914 21)	9/14/21 105005	7 1 AF		M5/45D
MW13D(0914 21)	9/14/21 1010	3		# #
MW14T (091521)	2/15/21 0750	31112		
MW16 (09 14 21)	9/14/21 1350	31112	100	
M4)25I (09 1421)	9/14/21/11/0	3		
MW27 (0915 21)	9/15/21/1015	3,1112		
MW28P (09 14 21)	2/14/21 1030 G W	36		
Possible Hazard Identification	Poison B Unknown Radiological	Sample Disposal (A fee may be	assessed if samples are retain	
Non-Hazard Flammable Skin Irritant Plammable Skin Irritant Flammable Skin Irritant P	Poison B Unknown Radiological	Return To Client Special Instructions/QC Requirem	Disposal By Lab Are	chive For Months
Empty Kit Relinquished by	Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 15/21 1300 Company	Redeived by:	Date Time / 2 (1300 FTA-BAIT
Relinquished by	Date/Time:		Date/Filme:	16-21 Company Aft
Relinquished by:	Date/Time: Company	Received by:	Date/Time:	930 Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No		Cooler Temperature(s) °C and Other I	Remarks:	

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park

Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

💸 eurofins

Environment Testing America

Enterly School Proceedings Procedings Proceedings Procedings Proceedings	Client Information	Sampler: Andy Feild	Lab PM: Colussy, Jill L	Carrier Tracking No(s)7/7/24	COC No: 180-72814-14117.1
Analysis Requested Analysi	Client Contact:	Dhagai		State of Origin:	
Decided Respective	Company:				
10.2010 20.2015 20.2	Address: 7550 Teague Road Suite 210 City: Hanover State, Zip:	TAT Requested (days): Norme al	07 0978		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
Action A					F - MeOH R - Na2S2O3
To Description Descripti	302-897-8993(Tel)	30005455.0002.			H - Ascorbic Acid T - TSP Dodecahydrate
Sample Identification	Email: shwetha.sridharan@arcadis.com	WO #:			I - DI Water V - MCAA
Sample Identification	Project Name:				L - EDA Z - other (specify)
Sample Identification Sample Date Time Sample Internation Sample Internation Sample Date Time Sample Internation Sample Date Time Sample Internation Sample Date Time Sample Internation Sample Date Time Sample Internation Sample Date Time Sample Internation Sample Date Time Sam	Site:				Other:
MW Y Q S Z	Sample Identification	Sample Date Time G=grab) BT-Tissue	trix Poolity Walker States of the Color of t	Total Number	Special Instructions/Note:
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MW Y O S 21 24 O S O O S O O S O O	M428D(0914 21)	1 / / / / /			
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#W 22D (09 14 21) 9 14 1 1200 3 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
MW 22 D (09 1421) 9 14 1 1255 3 1 1 1 1 2 1 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 2 1 1 1 1 2 1 1 1 1 1 2 1 1 1 1 1 2 1 1 1 1 1 2 1			 - - -		*
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PUP 02 (09 4 21) 9 (14 2 300 G W 3 1 1 2 2 3 4 4 4 4 4 4 4 4 4		7 10 101 0830	\ 		
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Deliverable Requested: I, II, III, IV, Other (specify) Company Possible Hazard Identification	· · · · · · · · · · · · · · · · · · ·	Sample Disposal (A fee may be	e assessed if samples are retain		
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	Relinquished by:	Date/Time: Compar	ny Received by:	Date/Time:	9.3 6 Company
Δ Yes Δ No Ver: 06/08/2021 Ver: 06/08/2021			Cooler Temperature(s) °C and Other	Remarks:	
	Δ Yes Δ No	D	44 of 42		Ver: 06/08/2021 10/6/20

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

eurofins	

Environment Testing America

hone: 412-963-7058 Fax: 412-963-2468				l l		ouiiii	10re	
lient Information	Sampler: Andi	Feild 254 0186 PWSID:	Lab PM: Colussy, Jill	L		Carrier Tracking	1	OC No: 80-72814-14117.1
ient Contact: Is. Shwetha Sridharan	Phone: 443/3	354 0186	E-Mail: Jill.Colussy(②Eurofinset.d	com	State of Origin:	P F	age: Page 3 of 5
ompany: RCADIS U.S., Inc.		PWSID:			Analysis R	equested		ob #:
ldress:	Due Date Requested:	C+ 1/1	Dist.				P	reservation Codes:
550 Teague Road Suite 210 y:	TAT Requested (days):	Standard		60	0			A - HCL M - Hexane
anover	TAT Requested (days).	Maryan		\$26	299			B - NaOH N - None C - Zn Acetate O - AsNaO2
ate, Zip:	Compliance Project: Δ	Yes A No		8				D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
D, 21076 one:	PO#:	165 4 110			1 1 1 1			- MeOH R - Na2S2O3
2-897-8993(Tel)	30005455.0002.		o	2000	1000		100	H - Ascorbic Acid T - TSP Dodecahydrate
ail: wetha.sridharan@arcadis.com	WO #:		(Yes or No	7 0				- Ice U - Acetone J - DI Water V - MCAA
ject Name:	Project #:		8 10 8 10	M	0		ner	K - EDTA W - pH 4-5 EDA Z - other (specify)
tec Havre de Grace MD	18017987		- 8 8	C3 01/2	3		nta	
cytec	ssow#:		A Filtered Sample (Yes	200]]		Total Number of containers	Other:
,		Sample Mat	trix	200	32		pher	
		Type (www	water,	0 3			Nun	
<u> </u>	Sam	iple (C=comp, o=was		in			tal	
mple Identification	Sample Date Tir	ne G=grab) BT=Tissu Preservation Co		n	1 C762 CAS MSC S			Special Instructions/Note:
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MW18 (071521)31	9/15/21/09	40 G 6	<u>' </u>	711	12		636	
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essible Hazard Identification			1	nalo Disaos	al (A foo may be	a accessed if samples	aro retaine	d longer than 1 month)
Non-Hazard Flammable Skin Irritant	Poison B Unknown	Radiological		Return To	Client	Disposal By Lab	Archiv	
eliverable Requested: I, II, III, IV, Other (specify)	FOISOIT B UTIKITOWIT	Radiological			ons/QC Requiren		Aicin	WOTERS
				_		Method of Shipmen	.	
npty Kit Relinquished by:	Date:	ICamaa.	Time:		71-			[C
linquished by:	Date/Time:	1300 Compa	Com.	Received by	Me	- Date/in	B/a//	300 Elar Bal
Inguished by:	Date/filme:	Compa		Received by:	101	Dafte/Tir		Company 1 /
with e	19/10/21 /	100 AIA	TOA ()) W as	Date/Tir	1 - 16	Company
inquished by:	Date/Time:	Compar	iny	Received by:		Date/Tir	ne.	9 m Company
Custody Seals Intact: Custody Seal No.:	ton de la company			Cooler Tempera	ature(s) °C and Other	Remarks:	With the Land	
A Ves A No				Section 1.				

Client: ARCADIS U.S., Inc.

Job Number: 180-127160-1

Login Number: 127160

List Number: 1

List Source: Eurofins TestAmerica, Pittsburgh

Creator: Watson, Debbie		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive **RIDC Park** Pittsburgh, PA 15238 Tel: (412)963-7058

Laboratory Job ID: 180-129307-1

Client Project/Site: Cytec Havre de Grace MD

For:

ARCADIS U.S., Inc. 7550 Teague Road Suite 210 Hanover, Maryland 21076

Attn: Ms. Shwetha Sridharan



Authorized for release by: 11/17/2021 2:37:34 PM

Jill Colussy, Project Manager I (412)963-2444

Jill.Colussy@Eurofinset.com

·····LINKS ······

Review your project results through Total Access

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions/Glossary	4
Certification Summary	5
Sample Summary	6
Method Summary	7
Lab Chronicle	8
Client Sample Results	9
QC Sample Results	11
QC Association Summary	14
Chain of Custody	16
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Case Narrative

Client: ARCADIS U.S., Inc.

Job ID: 180-129307-1 Project/Site: Cytec Havre de Grace MD

Job ID: 180-129307-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-129307-1

Receipt

The samples were received on 10/30/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.4° C.

The laboratory received a TRIP BLANK that was not listed on the chain of custody. This sample was logged in for VOA analysis.

GC/MS VOA

The continuing calibration verification (CCV) analyzed in 180-378359 was outside the method criteria for the following analyte(s): 1,2-Dibromo-3-Chloropropane, Methylene Chloride, Isopropylbenzene.(HIGH). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

IC

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample MW-19DI (102921) (180-129307-1) was not filtered within 15 minutes of sample collection as required by the method: MW-19DI (102921) (180-129307-1). The sample was filtered prior to analysis at the laboratory, and the results have been reported.

The iron concentrations found in the bracketing continuing calibration blanks (CCB) were greater than the reporting limit. The associated samples bracketed by this CCB had iron concentrations at least 10X greater than the CCB concentrations. All data was reported.

General Chemistry

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Qualifiers

HPLC/IC

Qualifier **Qualifier Description**

MS and/or MSD recovery exceeds control limits.

Metals

Qualifier **Qualifier Description**

Calibration Blank (ICB and/or CCB) is outside acceptance limits.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor**

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit Minimum Level (Dioxin) ML MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

Negative / Absent NEG POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive QC **Quality Control**

Relative Error Ratio (Radiochemistry) RER

Reporting Limit or Requested Limit (Radiochemistry) RL

Relative Percent Difference, a measure of the relative difference between two points **RPD**

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

TNTC Too Numerous To Count

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21 *
California	State	2891	04-30-22
Connecticut	State	PH-0688	09-30-22
Florida	NELAP	E871008	06-30-22
Georgia	State	PA 02-00416	04-30-22
Illinois	NELAP	004375	06-30-22
Kansas	NELAP	E-10350	01-31-22
Kentucky (UST)	State	162013	04-30-22
Kentucky (WW)	State	KY98043	12-31-21
Louisiana	NELAP	04041	06-30-22
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-21
Nevada	State	PA00164	08-31-22
New Hampshire	NELAP	2030	04-05-22
New Jersey	NELAP	PA005	06-30-22
New York	NELAP	11182	04-01-22
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-22
Oregon	NELAP	PA-2151	02-06-22
Pennsylvania	NELAP	02-00416	04-30-22
Rhode Island	State	LAO00362	12-31-21
South Carolina	State	89014	04-30-22
Texas	NELAP	T104704528	03-31-22
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-22
Virginia	NELAP	10043	09-15-22
West Virginia DEP	State	142	01-31-22
Wisconsin	State	998027800	08-31-22

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^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-129307-1	MW-19DI (102921)	Water	10/29/21 10:00	10/30/21 10:30
180-129307-2	TRIP BLANK	Water	10/29/21 00:00	10/30/21 10:30

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Job ID: 180-129307-1

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Method Summary

Client: ARCADIS U.S., Inc.

Job ID: 180-129307-1 Project/Site: Cytec Havre de Grace MD

Method	Method Description	Protocol	Laboratory
EPA 8260D	Volatile Organic Compounds by GC/MS	SW846	TAL PIT
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
EPA 9060A	Organic Carbon, Total (TOC)	SW846	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
5030C	Purge and Trap	SW846	TAL PIT
Filtration	Sample Filtration	None	TAL PIT

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-19DI (102921)

Lab Sample ID: 180-129307-1 Date Collected: 10/29/21 10:00 **Matrix: Water**

Date Received: 10/30/21 10:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis Instrumen	EPA 8260D at ID: CHHP11		1	5 mL	5 mL	378359	11/10/21 16:36	APD	TAL PIT
Total/NA	Analysis Instrumen	EPA 300.0 R2.1 at ID: CHICS2100B		1			377100	10/31/21 20:02	M1D	TAL PIT
Dissolved	Filtration	Filtration			250 mL	1.0 mL	378415	11/10/21 11:56	KEM	TAL PIT
Dissolved	Prep	3005A			50 mL	50 mL	378725	11/12/21 09:25	RGM	TAL PIT
Dissolved	Analysis Instrumen	EPA 6020B at ID: DORY		1			379151	11/13/21 14:11	RJR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	378431	11/12/21 11:00	RGM	TAL PIT
Total Recoverable	Analysis Instrumen	EPA 6020B at ID: A		1			378981	11/13/21 21:26	RJR	TAL PIT
Total/NA	Analysis Instrumen	EPA 9060A at ID: TOC1030		1			377523	11/02/21 20:45	KMM	TAL PIT

Lab Sample ID: 180-129307-2 **Client Sample ID: TRIP BLANK**

Date Collected: 10/29/21 00:00 **Matrix: Water**

Date Received: 10/30/21 10:30

Prep Type Total/NA	Batch Type Analysis	Batch Method EPA 8260D	Run	Factor	Initial Amount 5 mL	Final Amount 5 mL	Batch Number 378359	Prepared or Analyzed 11/10/21 16:10	Analyst	Lab
	,	it ID: CHHP11		·	·	· · · · -	0.0000	,,		

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Filtration

KEM = Kimberly Mahoney

Batch Type: Prep

RGM = Rebecca Manns

Batch Type: Analysis

APD = Aaron DeLeo

KMM = Kendric Moore

M1D = Maureen Donlin

RJR = Ron Rosenbaum

Eurofins TestAmerica, Pittsburgh

11/17/2021

Job ID: 180-129307-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-19DI (102921)

Date Collected: 10/29/21 10:00 Date Received: 10/30/21 10:30 Lab Sample ID: 180-129307-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/10/21 16:36	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/10/21 16:36	1
1,2-Dichloroethane	30		1.0	0.57	ug/L			11/10/21 16:36	1
Chloroethane	ND		1.0	0.90	ug/L			11/10/21 16:36	1
Chloroform	ND		1.0	0.60	ug/L			11/10/21 16:36	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			11/10/21 16:36	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/10/21 16:36	1
Trichloroethene	ND		1.0	0.69	ug/L			11/10/21 16:36	1
Vinyl chloride	ND		1.0	0.41	ug/L			11/10/21 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		26 - 156				-	11/10/21 16:36	1
4-Bromofluorobenzene (Surr)	103		36 - 124					11/10/21 16:36	1
Dibromofluoromethane (Surr)	83		46 - 149					11/10/21 16:36	1
Toluene-d8 (Surr)	111		40 - 146					11/10/21 16:36	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Sulfate	36	F1	1.0	0.76	mg/L			10/31/21 20:02	1
	_									

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	36000 ^2	50	20	ug/L		11/12/21 11:00	11/13/21 21:26	1
Method: EPA 6020B - Metals (I	CP/MS) - Dissolved							

Metriod. Li A 0020D - Metais (101	/WO) - Dis	3301464							
Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	59		50	20	ug/L		11/12/21 09:25	11/13/21 14:11	1

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.7	1.0	0.51	mg/L			11/02/21 20:45	1

Lab Sample ID: 180-129307-2 **Client Sample ID: TRIP BLANK** Date Collected: 10/29/21 00:00 **Matrix: Water** Date Received: 10/30/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/10/21 16:10	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/10/21 16:10	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/10/21 16:10	1
Chloroethane	ND		1.0	0.90	ug/L			11/10/21 16:10	1
Chloroform	ND		1.0	0.60	ug/L			11/10/21 16:10	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			11/10/21 16:10	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/10/21 16:10	1
Trichloroethene	ND		1.0	0.69	ug/L			11/10/21 16:10	1
Vinyl chloride	ND		1.0	0.41	ug/L			11/10/21 16:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		26 - 156			•		11/10/21 16:10	1
4-Bromofluorobenzene (Surr)	106		36 - 124					11/10/21 16:10	1

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Page 9 of 18

11/17/2021

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-129307-2

Date Collected: 10/29/21 00:00 Matrix: Water

Date Received: 10/30/21 10:30 Matrix: Water

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	87	46 - 149		11/10/21 16:10	1
Toluene-d8 (Surr)	102	40 - 146		11/10/21 16:10	1

6

7

8

9

11

12

1:

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1 Project/Site: Cytec Havre de Grace MD

Method: EPA 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 180-378359/14

Matrix: Water

Analyte

Chloroethane

Trichloroethene

Vinyl chloride

Chloroform

Analysis Batch: 378359

Client Sample ID: Method Blank Prep Type: Total/NA

11/10/21 14:27

MB MB Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac D 1,1,1-Trichloroethane ND 1.0 0.60 ug/L 11/10/21 14:27 1,1,2-Trichloroethane ND 1.0 0.45 ug/L 11/10/21 14:27 1,2-Dichloroethane ND 1.0 0.57 ug/L 11/10/21 14:27 0.90 ug/L ND 11/10/21 14:27 1.0 ND 1.0 0.60 ug/L 11/10/21 14:27 cis-1,2-Dichloroethene ND 1.0 0.71 ug/L 11/10/21 14:27 Methylene Chloride ND 1.0 0.89 ug/L 11/10/21 14:27 ND 1.0 0.69 ug/L 11/10/21 14:27

0.41 ug/L

MB MB

ND

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		26 - 156	-		11/10/21 14:27	1
4-Bromofluorobenzene (Surr)	110		36 - 124			11/10/21 14:27	1
Dibromofluoromethane (Surr)	89		46 - 149			11/10/21 14:27	1
Toluene-d8 (Surr)	106		40 - 146			11/10/21 14:27	1

1.0

Lab Sample ID: LCS 180-378359/4

Matrix: Water

Analysis Batch: 378359

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	10.0	10.8		ug/L		108	58 - 126	
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	62 - 131	
1,2-Dichloroethane	10.0	10.1		ug/L		101	51 - 142	
Chloroethane	10.0	11.0		ug/L		110	10 - 170	
Chloroform	10.0	9.98		ug/L		100	66 - 125	
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	60 - 130	
Methylene Chloride	10.0	12.0		ug/L		120	24 - 170	
Trichloroethene	10.0	10.7		ug/L		107	60 - 129	
Vinyl chloride	10.0	10.7		ug/L		107	33 - 154	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		26 - 156
4-Bromofluorobenzene (Surr)	117		36 - 124
Dibromofluoromethane (Surr)	96		46 - 149
Toluene-d8 (Surr)	108		40 - 146

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 180-377100/7

Matrix: Water

Analysis Batch: 377100

MB MB

RL **MDL** Unit **Analyte** Result Qualifier Prepared Analyzed Dil Fac Sulfate 1.0 0.76 mg/L 10/31/21 13:42 ND

Eurofins TestAmerica, Pittsburgh

Client Sample ID: Method Blank

Prep Type: Total/NA

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Job ID: 180-129307-1

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: MW-19DI (102921)

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: MW-19DI (102921)

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 378431

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 180-377100/6

Matrix: Water

Analysis Batch: 377100

LCS LCS Spike %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 90 - 110 Sulfate 50.0 48.3 mg/L 97

Lab Sample ID: 180-129307-1 MS

Matrix: Water

Analysis Batch: 377100

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Unit D %Rec Limits Analyte 36 F1 50.0 90 - 110 Sulfate 81.3 mg/L 91

Lab Sample ID: MB 180-377146/7

Matrix: Water

Analysis Batch: 377146

MB MB

Analyte

Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Sulfate ND 1.0 0.76 mg/L 11/01/21 10:28

Lab Sample ID: LCS 180-377146/6

Matrix: Water

Analysis Batch: 377146

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Sulfate 49.8 50.0 mg/L 100 90 - 110

Lab Sample ID: 180-129307-1 MSD

Matrix: Water

Analysis Batch: 377146

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Limit Sulfate 36 F1 50.0 78.6 F1 85 mg/L 90 - 110 20

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-378431/1-A

Matrix: Water

Analysis Batch: 378981

Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 378431

MDL Unit Analyte Result Qualifier RL Prepared Analyzed Dil Fac 20 ug/L 50 11/12/21 11:00 11/13/21 17:51 ND Iron

Lab Sample ID: LCS 180-378431/2-A

Matrix: Water

Analysis Batch: 378981

LCS LCS Spike

MR MR

%Rec. Analyte Added Result Qualifier Unit %Rec Limits 5000 5050 Iron ug/L 101 80 - 120

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10

Job ID: 180-129307-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-378725/1-A

Matrix: Water

Analyte

Analyte

Iron

Iron

Analysis Batch: 379151

Client Sample ID: Method Blank **Prep Type: Total Recoverable Prep Batch: 378725**

Result Qualifier RL **MDL** Unit Analyzed Dil Fac Prepared 50 11/12/21 09:25 11/13/21 12:18 ND 20 ug/L

Lab Sample ID: LCS 180-378725/2-A

Matrix: Water

Analysis Batch: 379151

Spike Added 5000

RL

50

RL

1.0

Spike

Added

20.0

Spike

Added

20.0

Result Qualifier 5110

LCS LCS

MDL Unit

MDL Unit

0.51 mg/L

LCS LCS

LCSD LCSD

19.8

Result Qualifier

Unit

mg/L

19.8

20 ug/L

LCS LCS

4860

Unit D %Rec ug/L

80 - 120 102

Prepared

Client Sample ID: Lab Control Sample

%Rec.

Limits

11/12/21 09:25 11/13/21 12:21

Client Sample ID: Method Blank

Analyzed

Prep Type: Total Recoverable

Prep Batch: 378725

Prep Type: Dissolved

Prep Type: Dissolved

Prep Batch: 378725

Prep Batch: 378725

Dil Fac

Lab Sample ID: PB 180-378415/1-D

Matrix: Water

Analysis Batch: 379151

PB PB

MB MB

ND

Result Qualifier

MB MB

Analyte Result Qualifier Iron $\overline{\mathsf{ND}}$

Lab Sample ID: LCS 180-378415/2-C

Matrix: Water

Analysis Batch: 379151

Analyte

Spike Iron

Added 5000 Method: EPA 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 180-377523/6

Matrix: Water Analysis Batch: 377523

Analyte

Total Organic Carbon - Quad

Lab Sample ID: LCS 180-377523/4 **Matrix: Water**

Analysis Batch: 377523

Total Organic Carbon - Quad

Lab Sample ID: LCSD 180-377523/5 **Matrix: Water**

Analysis Batch: 377523

Total Organic Carbon - Quad

Client Sample ID: Lab Control Sample

Result Qualifier Unit ug/L

%Rec

Limits

80 - 120

%Rec.

Client Sample ID: Method Blank Prep Type: Total/NA

11/02/21 18:09

Prepared Analyzed Dil Fac

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

%Rec.

Result Qualifier Unit %Rec Limits mg/L 99 85 - 115

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

RPD %Rec. %Rec Limits **RPD** Limit 99 85 - 115

QC Association Summary

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

GC/MS VOA

Analysis Batch: 378359

Lab Sample ID 180-129307-1	Client Sample ID MW-19DI (102921)	Prep Type Total/NA	Matrix Water	Method EPA 8260D	Prep Batch
180-129307-2	TRIP BLANK	Total/NA	Water	EPA 8260D	
MB 180-378359/14	Method Blank	Total/NA	Water	EPA 8260D	
LCS 180-378359/4	Lab Control Sample	Total/NA	Water	EPA 8260D	

HPLC/IC

Analysis Batch: 377100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129307-1	MW-19DI (102921)	Total/NA	Water	EPA 300.0 R2.1	
MB 180-377100/7	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-377100/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-129307-1 MS	MW-19DI (102921)	Total/NA	Water	EPA 300.0 R2.1	

Analysis Batch: 377146

Lab Sample ID MB 180-377146/7	Client Sample ID Method Blank	Prep Type Total/NA	Matrix Water	Method EPA 300.0 R2.1	Prep Batch
LCS 180-377146/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-129307-1 MSD	MW-19DI (102921)	Total/NA	Water	EPA 300.0 R2.1	

Metals

Filtration Batch: 378415

Lab Sample ID 180-129307-1	Client Sample ID MW-19DI (102921)	Prep Type Dissolved	Matrix Water	Method Filtration	Prep Batch
PB 180-378415/1-D	Method Blank	Dissolved	Water	Filtration	
LCS 180-378415/2-C	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 378431

Lab Sample ID 180-129307-1	Client Sample ID MW-19DI (102921)	Prep Type Total Recoverable	Matrix Water	Method 3005A	Prep Batch
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 378725

Lab Sample ID 180-129307-1	Client Sample ID MW-19DI (102921)	Prep Type Dissolved	Matrix Water	Method 3005A	Prep Batch 378415
MB 180-378725/1-A	Method Blank	Total Recoverable	Water	3005A	
PB 180-378415/1-D	Method Blank	Dissolved	Water	3005A	378415
LCS 180-378415/2-C	Lab Control Sample	Dissolved	Water	3005A	378415
LCS 180-378725/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 378981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129307-1	MW-19DI (102921)	Total Recoverable	Water	EPA 6020B	378431
MB 180-378431/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	378431
LCS 180-378431/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	378431

Analysis Batch: 379151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129307-1	MW-19DI (102921)	Dissolved	Water	EPA 6020B	378725
MB 180-378725/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	378725

Job ID: 180-129307-1

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Metals (Continued)

Analysis Batch: 379151 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
PB 180-378415/1-D	Method Blank	Dissolved	Water	EPA 6020B	378725
LCS 180-378415/2-C	Lab Control Sample	Dissolved	Water	EPA 6020B	378725
LCS 180-378725/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	378725

General Chemistry

Analysis Batch: 377523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-129307-1	MW-19DI (102921)	Total/NA	Water	EPA 9060A	
MB 180-377523/6	Method Blank	Total/NA	Water	EPA 9060A	
LCS 180-377523/4	Lab Control Sample	Total/NA	Water	EPA 9060A	
LCSD 180-377523/5	Lab Control Sample Dup	Total/NA	Water	EPA 9060A	

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

Baltimore #201

🔆 eurofins

Environment Testing America

Phone: 412-963-7058 Fax: 412-963-2468		1120.	
Client Information	Sampler: Lab PM: Colussy, Jill L	Carrier Tracking No(s):	180-75506-14547.1
Client Contact: Ms. Shwetha Sridharan	Phone: HH3-542-8667 Jill.Colussy@E	iurofinset.com State of Origin:	Page: Page 1 of 1
Company: ARCADIS U.S., Inc.	PWSID:	Analysis Requested	Job#:
Address: 7550 Teague Road Suite 210	Due Date Requested:		Preservation Codes:
City: Hanover	in reduction (anys).		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip: MD, 21076	Compliance Project: Δ Yes Δ No		D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone: 302-897-8993(Tel)	PO #:		F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email:			H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA
shwetha.sridharan@arcadis.com Project Name:	Project #:		K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Cytec Havre de Grace MD	Project #: 18017987 SSOW#:	T J J J J J J J J J J J J J J J J J J J	K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
Pennsylvania CyteC	Project #: 18017987 SSOW#: Matrix 12 Hall	ō	
	Sample Matrix	Sulfat Total I TOC	Special Instructions/Note:
	Sample Sample (C=Comp. Orwastaloii. Sample Date Time G=Grab)	Total Total	
Sample Identification	Sample Date Time G=grab) BT-Tissue, A-Ab) ii 0 U	797 8 2	Special Instructions/Note:
mW-19D1 (102921)	10/29/21 1000 G W 3) 2	
(MIC INDICIONAL)	10/4/14/1000 0 00		
	 	 	(SAC)
	 	 	
	 	┼┤┼╏╏╏	
			
		+ - 11 11 11 11 11 11 11 11	
		+ 18.00 10.00 10.00 10.00 10.00 10.00 10.00	
		180-129307 Chain of Custody	
Possible Hazard Identification		le Disposal (A fee may be assessed if samples are Return To Client Disposal By Lab	
Non-Hazard Flammable Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)	Poison B Unknown Radiological Specia	Return To Client Disposal By Lab Il Instructions/QC Requirements:	Archive For Months
Empty Kit Relinquished by:	Date: Time:	Method of Shipment:	
Relinquished by:			a. 1210 Company
Kyrk Bersten Agriculturished by:	Date/Time: Company Arcadis Rec	ceived by: Date/Time: Colors Date/Time: Dat	Combany - /9
- ALV	WINN GO DANG	Dwalen 11	30 9 ETAIL
Relinquished by:	Date/Time: Compliny Rec	Date/Time:	(O 13) Company
Custody Seals Intact: Custody Seal No.:	Coo	oler Temperature(s) °C and Other Remarks:	
Δ Yes Δ No			



Client: ARCADIS U.S., Inc.

Job Number: 180-129307-1

Login Number: 129307 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix E

Data Validation Report



Cytec Solvay Group

DATA REVIEW

Havre de Grace, Maryland

Volatile Organic Compound (VOC), Dissolved Gases, Metals and Miscellaneous

SDGs # 180-127160-1 and 221091833

Analyses Performed By: TestAmerica Laboratories, Inc. Pittsburgh, PA And Pace Analytical Gulf Coast

Report # 43132R Review Level: Tier II Project: 30077106.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group SDGs# 180-112193-1 and 180-112197-1 for samples collected in association with the Havre de Grace site in Maryland. The review was conducted as a Tier II evaluation and included review of data package completeness as required under USEPA Region III M3 validation. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

				Sample	Parent		Ana	lysis	
SDGs	Sample ID	Lab ID	Matrix	Collection Date	Sample	VOC	DG	MET	MISC
	MW4(091421)	180-127160-1	Water	09/14/21		Х			
	MW8S(091421)	180-127160-2	Water	09/14/21		Χ			
	MW12S(091421)	180-127160-3	Water	09/14/21		Х			
	MW6I(091521)	180-127160-4	Water	09/15/21		Х			
	MW12D(091421)	180-127160-5	Water	09/14/21		Х			
	MW13D(091421)	180-127160-6	Water	09/14/21		Х			
	MW14I(091521)	180-127160-7	Water	09/15/21		Х		Х	Х
	MW16(091421)	180-127160-8	Water	09/14/21		Х		Х	Х
	MW25I(091421)	180-127160-9	Water	09/14/21		Х			
	MW27(091521)	180-127160-10	Water	09/15/21		Х		Х	Х
	MW28D(091421)	180-127160-11	Water	09/14/21		Х			
180-112197-1	MW3(091421)	180-127160-12	Water	09/14/21		Х		Х	Х
	MW8D(091421)	180-127160-13	Water	09/14/21		Х			
	MW14(091521)	180-127160-14	Water	09/15/21		Х			
	MW18(091521)24	180-127160-15	Water	09/15/21		Х		Х	Х
	MW20DI(091521)	180-127160-16	Water	09/15/21		Х		Х	Х
	MW22D(091421)	180-127160-17	Water	09/14/21		Х			
	MW23(091521)40	180-127160-18	Water	09/15/21		Х		Х	Х
	DUP01(091421)	180-127160-19	Water	09/14/21	MW8S(091421)	Х			
	DUP02(091421)	180-127160-20	Water	09/14/21	MW3(091421)	Х		Х	Х
	TRIP BLANK	180-127160-21	Water	09/14/21		Х			
	MW23(091521)47	180-127160-22	Water	09/15/21		Х		Х	Х
	MW18(091521)31	180-127160-23	Water	09/15/21		Х		Х	Х
	MW3 (091421)	22109183301	Water	9/14/21			Х		
	MW16 (091421)	22109183302	Water	9/14/21			Х		
	DUP02 (091421)	22109183303	Water	9/14/21	MW3 (091421)		Х		
	MW14I (091521)	22109183304	Water	9/15/21			Х		
	MW23 (091521) 40	22109183305	Water	9/15/21			Х		
221091833	MW23 (091521)47	22109183306	Water	9/15/21			Х		
	MW27 (091521)	22109183307	Water	9/15/21			Х		
	MW20D1 (091521)	22109183308	Water	9/15/21			Х		
	MW18 (091521)24	22109183309	Water	9/15/21			Х		
	MW18 (091521)31	22109183310	Water	9/15/21			Х		
	TRIP BLANK	22109183311	Water	9/14/21			Х		

Note:

VOC - Volatile Organic Compound

DG - Dissolved gases

MET – Metal analysis includes total and dissolved iron

MISC – Miscellaneous analysis includes sulfate and total organic carbon.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Rep	Reported		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample receipt condition		Х		Х	
Requested analyses and sample results		Х		Х	
Master tracking list		Х		Х	
4. Methods of analysis		Х		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		X	
8. Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

Note:

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D and AM20GAX. All samples in this data set were subjected to M3 (Tier III) level data validation for organic compounds, as defined in the USEPA Region III Innovative Approaches to Data Validation (June 1995). Validation was performed following the procedures specified in Region III Modifications to National Functional Guidelines for Organic Data Review (September 1994) and USEPA. National Functional Guidelines for Organics Analyses (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
 - K The compound was positively identified; however, the associated numerical value is an estimated concentration only and the reported value may be biased high. Actual concentration is expected lower.
 - L The compound was positively identified; however, the associated numerical value is an estimated concentration only and the reported value may be biased low. Actual concentration is expected lower.

R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW846 8260D	Water	14 days from collection to analysis	Cool to < 6°C; preserved to a pH of less than 2 s.u.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample ID	Surrogate	Recovery
MW46(004424)	4-Bromofluorobenzene	> UL
MW16(091421)	Toluene-d8	> UL
MW27(091521)	Dibromofluoromethane	> UL

Notes:

UL – Upper control limit

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
- OL	Detect	J
< LL but > 10%	Non-detect	UJ

Control Limit	Sample Result	Qualification
	Detect	J
< 10%	Non-detect	R
< 10%	Detect	J
Surrogates diluted below the calibration curve due to the high	Non-detect	UJ
concentration of a target compounds	Detect	J

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was performed on sample MW12D(091421). The MS/MSD analysis exhibited acceptable recoveries.

Samples associated with MS/MSD recoveries exhibiting an RPD greater than the control limit are presented in the following table.

Sample ID	Compound
MW12D(091421)	Chloroethane

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
	Non-detect	UJ
> UL	Detect	J

5. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analyses

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery and RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits with the exceptions noted in the table below.

Sample ID	Analysis batch	Compound	LCS Recovery	LCSD Recovery
MW16(091421) MW25I(091421) MW27(091521) MW28D(091421) MW3(091421) MW8D(091421) MW14(091521)	372540	cis-1,2-Dichloroethene	> UL	AC

Sample ID	Analysis batch	Compound	LCS Recovery	LCSD Recovery
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Notes:

AC - Acceptable

UL - Upper control limit

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper central limit (LIL)	Non-detect	No Action
> the upper control limit (UL)	Detect	J
< the lower central limit (LL) but > 10%	Non-detect	UJ
< the lower control limit (LL) but > 10%	Detect	J
< 10%	Non-detect	R
< 10 <i>7</i> 0	Detect	J

Note:

Sample results were not qualified as rejected (R) due to the deviations listed above.

Samples associated with LCS/LCSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample ID	Compound		
	1,1,1-Trichloroethane		
MW16(091421) MW25I(091421) MW27(091521) MW28D(091421) MW3(091421) MW8D(091421) MW8D(091421)	1,2-Dichloroethane		
	Chloroform		
	cis-1,2-Dichloroethene		
	Methylene Chloride		
	Trichloroethene		

The criteria used to evaluate the RPD between the LCS/LCSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
> UL	Detect	J

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (ug/L)	Duplicate Result (ug/L)	RPD
MW-8S (091421) / DUP-01 (091421)	All target compounds	U	U	AC
	1,2-Dichloroethane	41	38	AC
MW 2 (004424) / DUD 02 (004424)	Methylene Chloride	35	45	AC
MW-3 (091421) / DUP-02 (091421)	Trichloroethene	10 U	2.3	AC
	Vinyl chloride	59	81	31%

Notes:

U - Non detect

AC - Acceptable

The compound Vinyl chloride associated with samples MW-3 (091421) and DUP-02 (091421) exhibited a field duplicate RPD greater than the control limit. The associated sample results were qualified as estimated.

7. System Performance and Overall Assessment

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample IDs	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW28D(091421)	1,2-Dichloroethane	920	1200	1200 D
DUP02(091421)	Vinyl chloride	110	81	81 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW846 8260D	Rep	orted	Performance Acceptable		Not			
	No	Yes	No	Yes	Required			
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)								
Tier II Validation								
Holding times		Х		Х				
Reporting limits (units)		Х		Х				
Blanks								
A. Method blanks		Х		Х				
B. Equipment blanks	Х				Х			
C. Trip blanks		Х		Х				
Laboratory Control Sample (LCS) %R		Х	Х					
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х				
LCS/LCSD Precision (RPD)		Х	Х					
Matrix Spike (MS) %R		Х		Х				
Matrix Spike Duplicate (MSD) %R		Х		Х				
MS/MSD Precision (RPD)		Х	Х					
Lab Duplicate (RPD)	Х				Х			
Field Duplicate (RPD)		Х	Х					
Surrogate Spike Recoveries		Х	Х					
Dilution Factor		Х		Х				
			1	1	1			

Notes:

%R Percent recovery

RPD Relative percent difference

DISSOLVED GASES ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAX	Water	14 days from collection to analysis	Cool to <6°C; preserved to a pH of greater than 10 s.u.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample ID	Compound	Sample Result	Qualification		
MW23 (091521) 40		Detected sample results >RL and <bal< td=""><td>"UB" at detected sample concentration</td></bal<>	"UB" at detected sample concentration		
MW18 (091521)24	Methane (TB)	Detected comple regults of and of All	"UB" at the RL		
MW18 (091521)31		Detected sample results <rl <bal<="" and="" td=""><td>Detected sample results <rl <bal<="" and="" td=""><td>Detected sample results <rl <bal<="" and="" td=""><td>OB at the RL</td></rl></td></rl></td></rl>	Detected sample results <rl <bal<="" and="" td=""><td>Detected sample results <rl <bal<="" and="" td=""><td>OB at the RL</td></rl></td></rl>	Detected sample results <rl <bal<="" and="" td=""><td>OB at the RL</td></rl>	OB at the RL

Note:

TB - Trip blank

RL - Reporting limit

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on samples from this SDG.

4. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analyses

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery and RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result (ug/L)	Duplicate Result (ug/L)	RPD
MW-3 (091421) / DUP-02 (091421)	Ethane	1.5	1.8	AC
	Ethene	20	32	46%
	Methane	53	59	11%

Notes:

AC - Acceptable

The compound Ethene associated with samples MW-3 (091421) and DUP-02 (091421) exhibited a field duplicate RPD greater than the control limit. The associated sample results were qualified as estimated.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAX	Rep	Reported		rmance ptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY	(GC/MS)				
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks	Х				Х
C. Trip blanks		Х	Х		
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R	Х				Х
Matrix Spike Duplicate (MSD) %R	Х				Х
MS/MSD Precision (RPD)	Х				Х
Lab Duplicate (RPD)	Х				Х
Field Duplicate (RPD)		Х	Х		
Dilution Factor		Х		Х	

Notes:

%R Percent recovery

RPD Relative percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020A, 300.0 and 9060A. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
 - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
 - E The reported value is estimated due to the presence of interference.
 - N Spiked sample recovery is not within control limits.
 - Duplicate analysis is not within control limits.
- Validation Qualifiers
 - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
 - UB Analyte is considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020B	Water	180 days from collection to analysis	Cool to < 6 C; pH <2 with HNO3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MS/MSD) / Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on sample from this SDG.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

The laboratory duplicate was not performed on sample from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result (ug/L)	Duplicate Result (ug/L)	RPD
MW 2 (001421) / DUD 02 (001421)	Iron, Total	3900	4500	14%
MW-3 (091421) / DUP-02 (091421)	Iron, Dissolved	U	U	AC

Notes:

U - Non detect

AC - Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All LCS recoveries were within control limits.

6. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution analysis was not performed on a samples from this SDG.

7. General Assessment - Total vs. Dissolved

When the dissolved concentration exceeded the associated total concentration, and both results were five times greater than the LOQ, then the %D between the total and dissolved concentrations must be less than 10%.

The calculated %D between the total and the dissolved sample results were within the control limit.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6020B	Repo	orted	_	rmance ptable	Not
	No	Yes	No	Yes	Required

Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)

Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Atomic Absorption – Manual Cold Vapor (CV)

Tier II Validation					
Holding Times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Instrument Blanks		Х		Х	
B. Method Blanks		X		Х	
C. Equipment/Field Blanks		Х		Х	
Laboratory Control Sample (LCS)		X	Х		
Laboratory Control Sample Duplicate (LCSD) %R	X				Х
LCS/LCSD Precision (RPD)	Х				Х
Matrix Spike (MS) %R	X				Х
Matrix Spike Duplicate (MSD) %R	X				Х
MS/MSD Precision (RPD)	X				Х
Lab Duplicate (RPD)	X				Х
Field Duplicate (RPD)		Х		Х	
ICP Serial Dilution %D	X				Х
Total vs. Dissolved		Х		Х	
Reporting Limit Verification		X		Х	

Notes:

%R = Percent recovery

RPD = Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to <6 °C.	
Total Organic Carbon (TOC) by EPA 9060A	Water	28 days from collection to analysis	Cool to <6 °C; pH of <2	

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) / Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample MW27(091521) for the Sulfate analysis. The MS/MSD analysis exhibited acceptable recoveries and RPD.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

The laboratory duplicate analysis was not performed on any of the samples from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
MW 2 (001421) / DUD 02 (001421)	Sulfate	1.4	2.0	AC
MW-3 (091421) / DUP-02 (091421)	Total Organic Carbon	0.94 J	1.3	AC

Notes:

AC - Acceptable

The calculated differences between the parent sample and field duplicate were acceptable.

5. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 300.0 and SM	Reported		Performance Acceptable		Not	
9060A	No	Yes	No	Yes	Required	
Miscellaneous Instrumentation						
Tier II Validation						
Holding times		X		X		
Reporting limits (units)		X		X		
Blanks						
A. Method blanks		Х		Х		
B. Equipment blanks	Х				Х	
Laboratory Control Sample (LCS) %R		Х		Х		
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х		
LCS/LCSD Precision (RPD)		Х		Х		
Matrix Spike (MS) %R		X		Х		
Matrix Spike Duplicate (MSD) %R		Х		Х		
MS/MSD Precision (RPD)		Х		Х		
Lab Duplicate (RPD)	Х				Х	
Field Duplicate (RPD)		Х		Х		
Dilution Factor		Х		Х		
Moisture Content		Х		Х		

Notes:

%R - percent recovery

RPD - relative percent difference,

%D – difference

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE:

DATE: October 26, 2021

PEER REVIEW: Rachelle Borne

DATE: October 29, 2021

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

Ballimererofins #201

Environment Testing America

Client Information		o PM: Diussy, Jill L	Carrier Tracking No(s):	COC No: 180-72814-14117.1
Client Contact: Ms. Shwetha Sridharan	Phone: 1112 2 21 21 21 E-M		State of Origin: Mary land	Page: Page 1 of 5
Company: ARCADIS U.S., Inc.	PWSID:	Analysis Re		Job#:
Address:	Due Date Requested: Standard	ES 4542	i i i i i i i i i i i i i i i i i i i	Preservation Codes:
7550 Teague Road Suite 210 City:	TAT Requested (days):	7760		A - HCL M - Hexane B - NaOH N - None
Hanover State, Zip:	Noireal	\$260 0 0 0 0 0		C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
MD, 21076 Phone:	Compliance Project: Δ Yes Δ No	1 1 1 2 2 2 3 1 1		E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
302-897-8993(Tel)	30005455.0002.	190868		G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO #:			J - Di Water V - MCAA
Project Name: Cytec Havre de Grace MD	Project #: 18017987	CC From The Control of		K - EDTA W - pH 4-5 L - EDA Z - other (specify)
Site: Cytec	ssow#:	Sample Cike	o Containe	Other:
Cylec			1. 1 1 16	
	Sample Matrix Type (Wewster.	10 N/O		
Samula Identification	Sample C=comp, O=wasts/oil, O	音音がいクロー		
Sample Identification	Preservation Code:			
MW4(091421)	9/14/21 1130 6 W	3	180-12/160 C	chain of Custody
M4) 85 (09 14 21)	9/14/21 1320	3		
MW125(091421)	9/14/21/1045	3		
MV GT (09 12/21)	9/9/21 1240	3		
MW120 (0914 21)	9/14/21 105005	7 1 AF		M5/45D
MW13D(0914 21)	9/14/21 1010	3		# #
MW14 T (091521)	2/15/21 0750	31112		
MW16 (09 14 21)	9/14/21 1350	31112	100	
M4)25I (09 1421)	9/14/21/11/0	3		
MW27 (0915 21)	9/15/21/1015	3,1112		
MW28P (09 14 21)	2/14/21 1030 G W	36		
Possible Hazard Identification	Poison B Unknown Radiological	Sample Disposal (A fee may be	assessed if samples are retain	
Non-Hazard Flammable Skin Irritant Plammable Skin Irritant Flammable Skin Irritant	Poison B Unknown Radiological	Return To Client Special Instructions/QC Requirem	Disposal By Lab Are	chive For Months
Empty Kit Relinquished by	Date:	Time:	Method of Shipment:	
Relinquished by:	Date/Time: 15/21 1300 Company	Redeived by:	Date Time / 2 (1300 FTA-BAIT
Relinquished by	Date/Time:		Date/Filme:	16-21 Company Aft
Relinquished by:	Date/Time: Company	Received by:	Date/Time:	930 Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No		Cooler Temperature(s) °C and Other I	Remarks:	

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

💸 eurofins **Baltimore**

Environment Testing America

Client Information	Sampler: Andy Feild Colo	PM: ussy, Jill L	Carrier Tracking No(s)#201	COC No: 180-72814-14117.1
Sient Contact: Ms. Shwetha Sridharan	Phone: 1:13 - Cal A . Cal	iil: Colussy@Eurofinset.com	State of Origin: Mary land	Page: Page 2 of 5
company:	PWSID:			Job #:
ARCADIS U.S., Inc.	Due Date Requested:	Analysis R	equestea	Preservation Codes:
550 Teague Road Suite 210	Standard			A - HCL M - Hexane
City:	TAT Requested (days):			B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip: MD, 21076	Compliance Project: Δ Yes Δ No	1 6 6 1		D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
Phone:	PO#:	100 00 00 00 00 00 00 00 00 00 00 00 00		F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4
802-897-8993(Tel) Email:	30005455.0002. Wo #:			H - Ascorbic Acid T - TSP Dodecahydrate U - Acetone U - Acetone
shwetha.sridharan@arcadis.com		12 6 J 8		J - DI Water V - MCAA K - EDTA W - pH 4-5
Project Name: Cytec Havre de Grace MD	Project #: 18017987	200 C		L - EDA Z - other (specify) Other:
Site:	SSOW#:			Other:
Cytec	No. of the last of	18 44 40		
	Sample Matrix Type (w-water,	15 3 19 Ch		Special Instructions/Note:
	Sample (C=comp, C=wasts/oil,	温暖の		Special Instructions/Note:
Sample Identification	Sample Date Time G=grab) BT=Tissue, A=AIr Preservation Code:			Special Instructions/Note:
MW3(091421)	9/14/21/145 G W	31112		
				
MW8D(091421)	7/14/21 1310	3	+	
MW14 (091521)	9/15/21 0800	3	 	-0.4
MW18 (0915 21) 24	9/15/21 0930	31112		
MW 20D1 (0915 21)	9/8/210910	31112		24
MW 220 (09 (8421)	9/18/21/255	3		
MW 23 (0915 ZI) 40	9/5/210830	31112		
DUPOI (09 14 21)	2/14/21 1200	3		
PUP 02 (09 14 21)	9/14/21/300 G W	31112		
		3		
Trip Blank				50
MU 23 (091521) 47	9/15/21 0840 G W	31112	a second if complex are ret	ained longer than 1 month)
Possible Hazard Identification Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Po	oison B Unknown Radiological	Sample Disposal (A fee may b	Disposal By Lab	Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	DISOTT B - OTKHOWT Radiological	Special Instructions/QC Requirer	nents:	
Empty Kit Relinquished by:	Date:	Time: 4	Method of Shipment:	
Relinquished by:	Date/Time: / / Company	/) // Y1	Date/fime: /	1300 Ent-On IT
· Chillian	Date/Time: 1300 Company Arca	dis many	Date/fine:	
Reinquished by:	Date Time: Company Company G/15/31 /7 CV STABI	Received by: Walo	n = 17	bal AMI
Relinquished by:	Date/Time: Company	Received by:	Date/Time:	936 Company
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) °C and Other	Remarks:	
Δ Yes Δ No				Ver 06/08/2021
	Page 41	of 43		Ver: 06/08/2021 10/6/2

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park

Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins	

Environment Testing America

Pittsburgh, PA 15238 Phone: 412-963-7058 Fax: 412-963-2468	Chain of Custody		America	
Client Information	Sampler And, Feild La	PM: Clussy, Jill L	Baltimore arrier Tracking #201	COC No: 180-72814-14117.1
Client Contact: Ms. Shwetha Sridharan		lail: SI .Colussy@Eurofinset.com	tate of Origin:	Page: Page 3 of 5
Company: ARCADIS U.S., Inc.	PWSID:	Analysis Requ		Job #:
oddress: 1750 Teague Road Suite 210	Due Date Requested: Standard	1002		Preservation Codes:
City:	TAT Requested (days):	7620		A - HCL M - Hexane B - NaOH N - None
Hanover State, Zip:	Mormal	326		C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
ID, 21076 hone:	Compliance Project: Δ Yes Δ No			E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3
02-897-8993(Tel)	30005455.0002.	LOCS CONO CONO CONO CONO CONO CONO CONO C		G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate i - Ice U - Acetone
_{mail:} hwetha.sridharan@arcadis.com	WO #:			J - DI Water V - MCAA
roject Name: Cytec Havre de Grace MD	Project#: 18017987	6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	containera	L - EDA Z - other (specify)
ite: cytec	SSOW#:	Sample As Line	ofcor	Other:
29112	Sample Matrix	Man Special Sp	l l l l	,
	Type (Wewater,	語版制 リーノ・タンイト	Total Number	
ample Identification	Sample Date (C=comp, O=wastaloil, Sample Date Time G=grab) BT=Tissue, A=w		Total	Special Instructions/Note:
	Preservation Code:			
MW18/07152,31	9/15/210940 G 6	1 31/12		
			- 1	
ossible Hazard Identification		Sample Disposal (A fee may be ass	sossed if samples are retain	ned longer than 1 month)
Non-Hazard Flammable Skin Irritant	Poison B Unknown Radiological	Return To Client Dis		chive For Months
eliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements	<u>;</u>	
mpty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
elinquished by:	Date/Time: Company	Received by	Date/fime:	1300 Company Ball
extraguished by:	Data (Tifes: /	Received by:	Dafte/Time;	1/2 2 Company
elinquished by:	Date/Time: Company	Received by:	Date/Time:	Company
				977 Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No		Cooler Temperature(s) °C and Other Rema	inks:	
	Page 4	2 of 43		Ver: 06/08/2021 10/6/2
	r ago r			10/0/2

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW4(091421)

Date Collected: 09/14/21 11:30 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:14	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:14	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:14	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:14	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:14	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:14	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:14	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:14	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		34 - 150					09/25/21 13:14	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 13:14	1
Dibromofluoromethane (Surr)	101		49 - 145					09/25/21 13:14	1
Toluene-d8 (Surr)	105		51 - 137					09/25/21 13:14	

Client Sample ID: MW8S(091421)

Date Collected: 09/14/21 13:20

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:36	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:36	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:36	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:36	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:36	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:36	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:36	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:36	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		34 - 150			-		09/25/21 13:36	1
4-Bromofluorobenzene (Surr)	78		43 - 131					09/25/21 13:36	1
Dibromofluoromethane (Surr)	96		49 - 145					09/25/21 13:36	1
Toluene-d8 (Surr)	94		51 - 137					09/25/21 13:36	1

Client Sample ID: MW12S(091421)

Date Collected: 09/14/21 10:45

Date Received: 09/16/21 09:30

Lab	Sample	ID:	180-127160-3
-----	--------	-----	--------------

Matrix: Water

Analyte	Result (Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 13:57	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 13:57	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 13:57	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 13:57	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 13:57	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 13:57	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 13:57	1

Eurofins TestAmerica, Pittsburgh

Page 15 of 43

10/6/2021

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW12S(091421)

Date Collected: 09/14/21 10:45 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 13:57	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 13:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		34 - 150					09/25/21 13:57	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 13:57	1
Dibromofluoromethane (Surr)	108		49 - 145					09/25/21 13:57	1

Client Sample ID: MW6I(091521)

Date Collected: 09/15/21 12:40

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.2	ug/L			09/27/21 10:21	2
1,1,2-Trichloroethane	ND		2.0	0.91	ug/L			09/27/21 10:21	2
1,2-Dichloroethane	52		2.0	1.1	ug/L			09/27/21 10:21	2
Chloroethane	ND		2.0	1.8	ug/L			09/27/21 10:21	2
Chloroform	ND		2.0	1.2	ug/L			09/27/21 10:21	2
cis-1,2-Dichloroethene	ND		2.0	1.4	ug/L			09/27/21 10:21	2
Methylene Chloride	ND		2.0	1.8	ug/L			09/27/21 10:21	2
Trichloroethene	3.5		2.0	1.4	ug/L			09/27/21 10:21	2
Vinyl chloride	ND		2.0	0.81	ua/L			09/27/21 10:21	2

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1,2-Dichloroethane-d4 (Surr)	106		34 - 150		09/27/21 10:21	2
	4-Bromofluorobenzene (Surr)	80		43 - 131		09/27/21 10:21	2
	Dibromofluoromethane (Surr)	103		49 - 145		09/27/21 10:21	2
İ	Toluene-d8 (Surr)	105		51 - 137	(09/27/21 10:21	2

Client Sample ID: MW12D(091421)

Date Collected: 09/14/21 10:55

Dibromofluoromethane (Surr)

Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 11:48	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 11:48	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 11:48	1
Chloroethane	ND	F2 UJ	1.0	0.90	ug/L			09/25/21 11:48	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 11:48	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 11:48	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 11:48	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 11:48	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 11:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		34 - 150					09/25/21 11:48	1
4-Bromofluorobenzene (Surr)	79		43 - 131					09/25/21 11:48	1

Eurofins TestAmerica, Pittsburgh

09/25/21 11:48

Page 16 of 43

49 - 145

98

10/6/2021

3

5

6

8

1 0

11

13

Lab Sample ID: 180-127160-5 Date Collected: 09/14/21 10:55 **Matrix: Water**

Date Received: 09/16/21 09:30

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

%Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 106 51 - 137 09/25/21 11:48

Client Sample ID: MW13D(091421) Lab Sample ID: 180-127160-6

Date Collected: 09/14/21 10:10 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result Qual	lifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			09/25/21 16:49	1
1,1,2-Trichloroethane	1.9	1.0	0.45	ug/L			09/25/21 16:49	1
1,2-Dichloroethane	16	1.0	0.57	ug/L			09/25/21 16:49	1
Chloroethane	ND	1.0	0.90	ug/L			09/25/21 16:49	1
Chloroform	ND	1.0	0.60	ug/L			09/25/21 16:49	1
cis-1,2-Dichloroethene	ND	1.0	0.71	ug/L			09/25/21 16:49	1
Methylene Chloride	ND	1.0	0.89	ug/L			09/25/21 16:49	1
Trichloroethene	2.8	1.0	0.69	ug/L			09/25/21 16:49	1
Vinyl chloride	ND	1.0	0.41	ug/L			09/25/21 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared Analy.	zed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		34 - 150	09/25/21	16:49	1
4-Bromofluorobenzene (Surr)	74		43 - 131	09/25/21	16:49	1
Dibromofluoromethane (Surr)	110		49 - 145	09/25/21	16:49	1
Toluene-d8 (Surr)	105		51 - 137	09/25/21	16:49	1

Lab Sample ID: 180-127160-7 Client Sample ID: MW14I(091521)

Date Collected: 09/15/21 07:50 Date Received: 09/16/21 09:30

Toluene-d8 (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 15:02	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 15:02	1
1,2-Dichloroethane	4.4		1.0	0.57	ug/L			09/25/21 15:02	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 15:02	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 15:02	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 15:02	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 15:02	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 15:02	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 15:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		34 - 150					09/25/21 15:02	1
4-Bromofluorobenzene (Surr)	80		43 - 131					09/25/21 15:02	1
Dibromofluoromethane (Surr)	118		49 _ 145					09/25/21 15:02	1

_ Method: EPA 300.0 R2.1 - Anio	ns, Ion Chr	omatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	53		1.0	0.76	mg/L			09/26/21 07:46	1

51 - 137

124

Eurofins TestAmerica, Pittsburgh

Job ID: 180-127160-1

Matrix: Water

09/25/21 15:02

10/6/2021

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW14I(091521)

Date Collected: 09/15/21 07:50 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-7

Matrix: Water

Job ID: 180-127160-1

Method: EPA 6020B - Metals Analyte	(ICP/MS) - Total Recovera	able RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	47000	50	20	ug/L		09/29/21 13:44	10/01/21 12:01	1
Method: EPA 6020B - Metals	(ICP/MS) - Dissolved							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19000	50	20	ug/L		09/30/21 13:51	10/02/21 15:32	1
General Chemistry								
Analyte	Result Qualifier	RL	MDL	1114	D	Prepared	Analyzed	Dil Fac

1.0

1.6

0.51 mg/L

Client Sample ID: MW16(091421)

Date Collected: 09/14/21 13:50 Date Received: 09/16/21 09:30

Total Organic Carbon - Quad

Lab Sample ID: 180-127160-8

10/04/21 14:54

Matrix: Water

Method: EPA 8260D - Volatile Organic Compounds by GC/MS Result Qualifier Analyte MDL Unit Dil Fac D Prepared Analyzed 0.60 ug/L 1,1,1-Trichloroethane ND 1.0 09/23/21 16:22 UJ ND 1,1,2-Trichloroethane 1.0 0.45 ug/L 09/23/21 16:22 1,2-Dichloroethane ND 1.0 0.57 09/23/21 16:22 UJ ug/L Chloroethane ND 1.0 0.90 ug/L 09/23/21 16:22 Chloroform ND UJ 1.0 0.60 ug/L 09/23/21 16:22 cis-1,2-Dichloroethene ND UJ 1.0 0.71 ug/L 09/23/21 16:22 Methylene Chloride ND UJ 1.0 0.89 ug/L 09/23/21 16:22 Trichloroethene ND 1.0 0.69 ug/L 09/23/21 16:22 UJ Vinyl chloride ND 1.0 0.41 ug/L 09/23/21 16:22

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	73		34 - 150		09/23/21 16:22	1
4-Bromofluorobenzene (Surr)	139	S1+	43 - 131		09/23/21 16:22	1
Dibromofluoromethane (Surr)	60		49 - 145		09/23/21 16:22	1
Toluene-d8 (Surr)	166	S1+	51 - 137		09/23/21 16:22	1

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography Dil Fac **Analyte** Result Qualifier RL **MDL** Unit Analyzed Prepared Sulfate 9.5 1.0 0.76 mg/L 09/25/21 16:53

Method: EPA 6020B - Metals (I	CP/MS) - Total Recovera	ble					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Iron	44000	50	20 ug/L		09/29/21 13:44	10/01/21 12:04	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved									
	Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	17000	50	20	ug/L		09/30/21 13:51	10/02/21 15:36	1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.98	J	1.0	0.51	mg/L			09/30/21 01:07	1

Client Sample ID: MW25I(091421)

Date Collected: 09/14/21 11:10 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-9

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 16:52	1
1,1,2-Trichloroethane	ND	1	1.0	0.45	ug/L			09/23/21 16:52	1
1,2-Dichloroethane	2.7	†1 J	1.0	0.57	ug/L			09/23/21 16:52	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 16:52	1
Chloroform	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 16:52	1
cis-1,2-Dichloroethene	ND	*+ *1 UJ	1.0	0.71	ug/L			09/23/21 16:52	1
Methylene Chloride	ND	* UJ	1.0	0.89	ug/L			09/23/21 16:52	1
Trichloroethene	1.7	*1	1.0	0.69	ug/L			09/23/21 16:52	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 16:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		34 - 150					09/23/21 16:52	1
4-Bromofluorobenzene (Surr)	79		43 - 131					09/23/21 16:52	1
Dibromofluoromethane (Surr)	90		49 - 145					09/23/21 16:52	1
Toluene-d8 (Surr)	66		51 - 137					09/23/21 16:52	

Client Sample ID: MW27(091521)

Date Collected: 09/15/21 10:15 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 17:21	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 17:21	1
1,2-Dichloroethane	ND	†1 UJ	1.0	0.57	ug/L			09/23/21 17:21	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 17:21	1
Chloroform	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 17:21	1
cis-1,2-Dichloroethene	ND	*+ *1 UJ	1.0	0.71	ug/L			09/23/21 17:21	1
Methylene Chloride	ND	* UJ	1.0	0.89	ug/L			09/23/21 17:21	1
Trichloroethene	ND	*1 UJ	1.0	0.69	ug/L			09/23/21 17:21	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 17:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	142		34 - 150					09/23/21 17:21	
4-Bromofluorobenzene (Surr)	71		43 - 131					09/23/21 17:21	1
Dibromofluoromethane (Surr)	156	S1+	49 - 145					09/23/21 17:21	1
Toluene-d8 (Surr)	96		51 - 137					09/23/21 17:21	1
Method: EPA 300.0 R2.1 - A	nions, Ion Ch	romatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.1		1.0	0.76	mg/L			09/26/21 06:53	1
Method: EPA 6020B - Metal	s (ICP/MS) - To	otal Recov	erable						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	28000		50	20	ug/L		09/29/21 13:44	10/01/21 12:15	1
Method: EPA 6020B - Metal	s (ICP/MS) - D	issolved							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	21000		50	20	ug/L		09/30/21 13:51	10/02/21 15:39	

10/6/2021

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW27(091521)

Date Collected: 09/15/21 10:15 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-10

Matrix: Water

General Chemistry

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.88 J	1.0	0.51 mg/L			10/04/21 15:19	1

Client Sample ID: MW28D(091421)

Date Collected: 09/14/21 10:30 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-11 **Matrix: Water**

> Analyzed Dil Fac 09/23/21 17:50 5 09/23/21 17:50 5

Method: EPA 8260D - Volatile Organic Compounds by GC/MS Result Qualifier **MDL** Unit Prepared 1,1,1-Trichloroethane ND 5.0 3.0 ug/L UJ 1,1,2-Trichloroethane ND 5.0 2.3 ug/L 2.9 ug/L 1,2-Dichloroethane 920 50 5.0 29 09/23/21 17:50 50 1200 D Chloroethane ND 5.0 4.5 ug/L 09/23/21 17:50 5 Chloroform ND 5.0 3.0 ug/L 09/23/21 17:50 5 UJ cis-1,2-Dichloroethene ND 5.0 3.5 ug/L 09/23/21 17:50 5 UJ Methylene Chloride ND 5.0 4.4 ug/L 09/23/21 17:50 5 UJ 5 Trichloroethene ND 5.0 3.4 ug/L 09/23/21 17:50 UJ Vinyl chloride ND 5.0 2.0 ug/L 09/23/21 17:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		34 - 150		09/23/21 17:50	5
4-Bromofluorobenzene (Surr)	83		43 - 131		09/23/21 17:50	5
Dibromofluoromethane (Surr)	91		49 - 145		09/23/21 17:50	5
Toluene-d8 (Surr)	86		51 - 137		09/23/21 17:50	5

Method: EPA 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND —	50	30	ug/L			09/25/21 12:53	50
1,1,2-Trichloroethane	ND	50	23	ug/L			09/25/21 12:53	50
1,2-Dichloroethane	1200	50	29	ug/L			09/25/21 12:53	50
Chloroethane	ND	50	45	ug/L			09/25/21 12:53	50
Chloroform	ND	50	30	ug/L			09/25/21 12:53	50
cis-1,2-Dichloroethene	ND	50	35	ug/L		_	09/25/21 12:53	50
Methylene Chloride	ND	50	44	ug/L			09/25/21 12:53	50
Trichloroethene	ND	50	34	ug/L			09/25/21 12:53	50
Vinyl chloride	ND	50	20	ug/L			09/25/21 12:53	50

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100	34 - 150		/25/21 12:53	50
4-Bromofluorobenzene (Surr)	80	43 - 131	09/	/25/21 12:53	50
Dibromofluoromethane (Surr)	102	49 - 145	09/	/25/21 12:53	50
Toluene-d8 (Surr)	109	51 - 137	09/	/25/21 12:53	50

Client Sample ID: MW3(091421)

Date Collected: 09/14/21 11:45 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-12

Matrix: Water

Mothod: EBA 9260D Volatile Organic Compounds

Wethod: EPA 8260D - Volatile (organic Co	mpounas by	y GC/IVIS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	<u>*1 UJ</u>	10	6.0	ug/L			09/23/21 18:19	10
1,1,2-Trichloroethane	ND	\	10	4.5	ug/L			09/23/21 18:19	10
1,2-Dichloroethane	41	* 1 J	10	5.7	ug/L			09/23/21 18:19	10

Eurofins TestAmerica, Pittsburgh

Page 20 of 43

10/6/2021

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc. Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW3(091421)

Date Collected: 09/14/21 11:45 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-12

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		10	9.0	ug/L			09/23/21 18:19	10
Chloroform	ND	*1 UJ	10	6.0	ug/L			09/23/21 18:19	10
cis-1,2-Dichloroethene	ND	+ *1 UJ	10	7.1	ug/L			09/23/21 18:19	10
Methylene Chloride	35	* 1 J	10	8.9	ug/L			09/23/21 18:19	10
Trichloroethene	ND	*∤ UJ	10	6.9	ug/L			09/23/21 18:19	10
Vinyl chloride	59	J	10	4.1	ug/L			09/23/21 18:19	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		34 - 150					09/23/21 18:19	10
4-Bromofluorobenzene (Surr)	52		43 - 131					09/23/21 18:19	10
Dibromofluoromethane (Surr)	70		49 - 145					09/23/21 18:19	10
Toluene-d8 (Surr)	106		51 - 137					09/23/21 18:19	10

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.4	1.0	0.76	mg/L			09/25/21 17:11	1

Method: EPA 6020B - Metals (IC	CP/MS) - To	tal Recoveral	ble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	3900		50	20	ug/L		09/30/21 13:42	10/02/21 12:16	1

Method: EPA 6020B - Metals (ICF	P/MS) - D	issolved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	ND		50	20	ug/L		09/30/21 13:51	10/02/21 15:43	1

General Chemistry							
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.94 J	1.0	0.51 mg/L			09/30/21 01:31	1

Client Sample ID: MW8D(091421) Lab Sample ID: 180-127160-13 Date Collected: 09/14/21 13:10 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD	*1 UJ	1.0	0.60	ug/L			09/23/21 18:47	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 18:47	1
1,2-Dichloroethane	ND	†1 UJ	1.0	0.57	ug/L			09/23/21 18:47	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 18:47	1
Chloroform	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 18:47	1
cis-1,2-Dichloroethene	ND	* + *1 UJ	1.0	0.71	ug/L			09/23/21 18:47	1
Methylene Chloride	ND	* UJ	1.0	0.89	ug/L			09/23/21 18:47	1
Trichloroethene	ND	*1 UJ	1.0	0.69	ug/L			09/23/21 18:47	1
Vinyl chloride	ND	•	1.0	0.41	ug/L			09/23/21 18:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		34 - 150			-		09/23/21 18:47	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/23/21 18:47	1
Dibromofluoromethane (Surr)	102		49 - 145					09/23/21 18:47	1
Toluene-d8 (Surr)	99		51 - 137					09/23/21 18:47	1

Eurofins TestAmerica, Pittsburgh

10/6/2021

Page 21 of 43

Client Sample ID: MW14(091521)

Date Collected: 09/15/21 08:00 Date Received: 09/16/21 09:30 Lab Sample ID: 180-127160-14

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	†1 UJ	1.0	0.60	ug/L			09/23/21 19:16	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/23/21 19:16	1
1,2-Dichloroethane	ND	*1 UJ	1.0	0.57	ug/L			09/23/21 19:16	1
Chloroethane	ND		1.0	0.90	ug/L			09/23/21 19:16	1
Chloroform	ND	*1 UJ	1.0	0.60	ug/L			09/23/21 19:16	1
cis-1,2-Dichloroethene	ND	*+ *1 UJ	1.0	0.71	ug/L			09/23/21 19:16	1
Methylene Chloride	ND	* UJ	1.0	0.89	ug/L			09/23/21 19:16	1
Trichloroethene	ND	*∤ UJ	1.0	0.69	ug/L			09/23/21 19:16	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/23/21 19:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		34 - 150			-		09/23/21 19:16	1
4-Bromofluorobenzene (Surr)	72		43 - 131					09/23/21 19:16	1
Dibromofluoromethane (Surr)	96		49 - 145					09/23/21 19:16	1
Toluene-d8 (Surr)	94		51 - 137					09/23/21 19:16	1

Client Sample ID: MW18(091521)24 Lab Sample ID: 180-127160-15

Date Collected: 09/15/21 09:30 Matrix: Water

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 15:23	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 15:23	1
1,2-Dichloroethane	0.82	J	1.0	0.57	ug/L			09/25/21 15:23	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 15:23	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 15:23	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 15:23	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 15:23	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 15:23	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 15:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		34 - 150					09/25/21 15:23	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/25/21 15:23	1
Dibromofluoromethane (Surr)	105		49 - 145					09/25/21 15:23	1
Toluene-d8 (Surr)	109		51 - 137					09/25/21 15:23	1
Method: EPA 300.0 R2.1 - A	Anions, Ion Ch	romatogra	phy						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	16		1.0	0.76	mg/L			09/26/21 08:04	1
Method: EPA 6020B - Meta	ls (ICP/MS) - To	otal Recov	erable						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	11000		50	20	ug/L		10/01/21 10:03	10/02/21 10:29	1
Method: EPA 6020B - Meta									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	57		50	20	ug/L		09/30/21 13:51	10/02/21 15:46	1

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Matrix: Water

Lab Sample ID: 180-127160-16

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW18(091521)24

Lab Sample ID: 180-127160-15 Date Collected: 09/15/21 09:30 **Matrix: Water**

Date Received: 09/16/21 09:30

General Chemistry								
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.2	1.0	0.51	mg/L			10/04/21 15:45	1

Client Sample ID: MW20DI(091521)

Date Collected: 09/15/21 09:10

Date Received: 09/16/21 09:30

Analyte	Result Qu	alifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60	ug/L			09/25/21 15:44	1
1,1,2-Trichloroethane	ND	1.0	0.45	ug/L			09/25/21 15:44	1
1,2-Dichloroethane	ND	1.0	0.57	ug/L			09/25/21 15:44	1
Chloroethane	ND	1.0	0.90	ug/L			09/25/21 15:44	1
Chloroform	ND	1.0	0.60	ug/L			09/25/21 15:44	1
cis-1,2-Dichloroethene	ND	1.0	0.71	ug/L			09/25/21 15:44	1
Methylene Chloride	ND	1.0	0.89	ug/L			09/25/21 15:44	1
Trichloroethene	ND	1.0	0.69	ug/L			09/25/21 15:44	1
Vinyl chloride	ND	1.0	0.41	ug/L			09/25/21 15:44	1
Surrogate	%Recovery Qu	alifier Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127	34 - 150					09/25/21 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		34 - 150		09/25/21 15:44	1
4-Bromofluorobenzene (Surr)	81		43 - 131		09/25/21 15:44	1
Dibromofluoromethane (Surr)	123		49 - 145		09/25/21 15:44	1
Toluene-d8 (Surr)	118		51 - 137		09/25/21 15:44	1

Method: EPA	300.0 R2	.1 - Anions,	Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	22		1.0	0.76	mg/L			09/26/21 08:22	1

Method: EPA 6020B - Metals (I	CP/MS) - Total Recoveral	ble					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Iron	28000	50	20 ug/l		10/01/21 10:03	10/02/21 10:32	

Method: EPA 6020B - Metals (I	CP/MS) - Dissolved							
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16000	50	20	ug/L		09/30/21 13:51	10/02/21 15:50	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	0.91	J	1.0	0.51	mg/L			10/04/21 16:10	1

Client Sample ID: MW22D(091421)

Lab Sample ID: 180-127160-17 Date Collected: 09/14/21 12:55 **Matrix: Water** Date Received: 09/16/21 09:30

Method: EPA 8260D - Volati	le Organic Con	npounds by	GC/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 16:06	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 16:06	1
1,2-Dichloroethane	0.59	J	1.0	0.57	ug/L			09/25/21 16:06	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 16:06	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 16:06	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 16:06	1

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Client Sample ID: MW22D(091421)

Lab Sample ID: 180-127160-17

Date Collected: 09/14/21 12:55 Date Received: 09/16/21 09:30

Job ID: 180-127160-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 16:06	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 16:06	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 16:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		34 - 150					09/25/21 16:06	1
4-Bromofluorobenzene (Surr)	77		43 - 131					09/25/21 16:06	1
Dibromofluoromethane (Surr)	96		49 - 145					09/25/21 16:06	1
Toluene-d8 (Surr)	95		51 - 137					09/25/21 16:06	

Lab Sample ID: 180-127160-18 Client Sample ID: MW23(091521)40 **Matrix: Water**

Date Collected: 09/15/21 08:30 Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 16:27	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 16:27	1
1,2-Dichloroethane	13		1.0	0.57	ug/L			09/25/21 16:27	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 16:27	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 16:27	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 16:27	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 16:27	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 16:27	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 16:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		34 - 150					09/25/21 16:27	1
4-Bromofluorobenzene (Surr)	75		43 - 131					09/25/21 16:27	1
Dibromofluoromethane (Surr)	107		49 - 145					09/25/21 16:27	1
Toluene-d8 (Surr)	120		51 - 137					09/25/21 16:27	1
Method: EPA 300.0 R2.1 - A	nione Ion Chi	romatogra	nhv						
	anions, ion om	umatugra	pily						
Analyte	•	Qualifier	PHY RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	•	_			Unit mg/L	<u>D</u>	Prepared	Analyzed 09/26/21 08:40	Dil Fac
Analyte Sulfate	Result 52	Qualifier	1.0			<u>D</u>	Prepared		Dil Fac
Analyte	Result 52	Qualifier	1.0		mg/L	<u>D</u>	Prepared Prepared		Dil Fac
Analyte Sulfate Method: EPA 6020B - Meta	Result 52	Qualifier otal Recov	RL 1.0	0.76	mg/L			09/26/21 08:40	1
Analyte Sulfate Method: EPA 6020B - Metal Analyte	Result	Qualifier otal Recov Qualifier	RL 1.0	0.76	mg/L Unit		Prepared	09/26/21 08:40 Analyzed	1
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron	Result	Qualifier otal Recov Qualifier	RL 1.0	0.76	mg/L Unit ug/L		Prepared	09/26/21 08:40 Analyzed	Dil Fac
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal	Result	Qualifier otal Recov Qualifier issolved	RL 1.0 erable RL 50	0.76 MDL 20	mg/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36	Dil Fac
Analyte Sulfate Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte	Result 52 Is (ICP/MS) - To Result 14000 Is (ICP/MS) - D Result	Qualifier otal Recov Qualifier issolved	RL 1.0 erable RL 50 RL	0.76 MDL 20	mg/L Unit ug/L Unit	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36 Analyzed	Dil Fac Dil Fac
Analyte Sulfate Method: EPA 6020B - Meta Analyte Iron Method: EPA 6020B - Meta Analyte Iron, Dissolved	Result 52 Is (ICP/MS) - To Result 14000 Is (ICP/MS) - D Result 11000	Qualifier otal Recov Qualifier issolved	RL 1.0 erable RL 50 RL	0.76 MDL 20	mg/L Unit ug/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:40 Analyzed 10/02/21 10:36 Analyzed	Dil Fac Dil Fac

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: DUP01(091421)

Date Collected: 09/14/21 12:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-19

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	MD		1.0	0.60	ug/L			09/27/21 12:30	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/27/21 12:30	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/27/21 12:30	1
Chloroethane	ND		1.0	0.90	ug/L			09/27/21 12:30	1
Chloroform	ND		1.0	0.60	ug/L			09/27/21 12:30	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/27/21 12:30	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/27/21 12:30	1
Trichloroethene	ND		1.0	0.69	ug/L			09/27/21 12:30	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/27/21 12:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		34 - 150					09/27/21 12:30	1
4-Bromofluorobenzene (Surr)	72		43 - 131					09/27/21 12:30	1
Dibromofluoromethane (Surr)	96		49 - 145					09/27/21 12:30	1
Toluene-d8 (Surr)	113		51 - 137					09/27/21 12:30	1

Client Sample ID: DUP02(091421) Lab Sample ID: 180-127160-20

Date Collected: 09/14/21 13:00

Date Received: 09/16/21 09:30

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	2.0	1.2	ug/L			09/27/21 10:43	2
1,1,2-Trichloroethane	ND	2.0	0.91	ug/L			09/27/21 10:43	2
1,2-Dichloroethane	38	2.0	1.1	ug/L			09/27/21 10:43	2
Chloroethane	ND	2.0	1.8	ug/L			09/27/21 10:43	2
Chloroform	ND	2.0	1.2	ug/L			09/27/21 10:43	2
cis-1,2-Dichloroethene	ND	2.0	1.4	ug/L			09/27/21 10:43	2
Methylene Chloride	45	2.0	1.8	ug/L			09/27/21 10:43	2
Trichloroethene	2.3	2.0	1.4	ug/L			09/27/21 10:43	2
Vinyl chloride	81 DJ 110 E	5.0 2.0 2.	0 0.81	ug/L			09/27/21 10:43	5 2
Surrogate	%Recovery Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surroga	ate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dich	loroethane-d4 (Surr)	107		34 - 150		09/27/21 10:43	2
4-Bromo	ofluorobenzene (Surr)	81		43 - 131		09/27/21 10:43	2
Dibromo	ofluoromethane (Surr)	106		49 - 145		09/27/21 10:43	2
Toluene	-d8 (Surr)	119		51 - 137		09/27/21 10:43	2

Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	5.0	3.0 ug/L		09/27/21 12:08	5
1,1,2-Trichloroethane	ND	5.0	2.3 ug/L		09/27/21 12:08	5
1,2-Dichloroethane	36	5.0	2.9 ug/L		09/27/21 12:08	5
Chloroethane	ND	5.0	4.5 ug/L		09/27/21 12:08	5
Chloroform	ND	5.0	3.0 ug/L		09/27/21 12:08	5
cis-1,2-Dichloroethene	ND	5.0	3.5 ug/L		09/27/21 12:08	5
Methylene Chloride	36	5.0	4.4 ug/L		09/27/21 12:08	5
Trichloroethene	ND	5.0	3.4 ug/L		09/27/21 12:08	5
Vinyl chloride	81	5.0	2.0 ug/L		09/27/21 12:08	5

Job ID: 180-127160-1

Client: ARCADIS U.S., Inc.

Project/Site: Cytec Havre de Grace MD

Client Sample ID: DUP02(091421)

Date Collected: 09/14/21 13:00 Date Received: 09/16/21 09:30

Lab Sample ID: 180-127160-20

Matrix: Water

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101	34 - 150	09/27/21 12:08	5
4-Bromofluorobenzene (Surr)	76	43 - 131	09/27/21 12:08	5
Dibromofluoromethane (Surr)	97	49 - 145	09/27/21 12:08	5
Toluene-d8 (Surr)	110	51 - 137	09/27/21 12:08	5

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Sulfate	2.0		1.0	0.76	mg/L			09/25/21 15:42	1

Method: EPA 6020B - Metals (ICP/MS) - Total Recoverable										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron	4500		50	20	ug/L		10/01/21 10:03	10/02/21 10:40	1

Method: EPA 6020B - Metals (ICP/MS) - Dissolved										
	Analyte	Result Q	ualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	ND		50	20	ug/L		09/30/21 13:51	10/02/21 15:57	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.3		1.0	0.51	mg/L			09/30/21 01:57	1

Lab Sample ID: 180-127160-21 **Client Sample ID: TRIP BLANK** Date Collected: 09/14/21 00:00 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 14:40	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 14:40	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			09/25/21 14:40	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 14:40	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 14:40	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 14:40	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 14:40	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 14:40	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1 2-Dichloroethane-d4 (Surr)	113		34 150					09/25/21 14:40	

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyz	ed:	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		34 - 150	09/25/21	14:40	1
4-Bromofluorobenzene (Surr)	79		43 - 131	09/25/21	14:40	1
Dibromofluoromethane (Surr)	107		49 - 145	09/25/21	14:40	1
Toluene-d8 (Surr)	117		51 - 137	09/25/21	14:40	1

Lab Sample ID: 180-127160-22 Client Sample ID: MW23(091521)47 **Matrix: Water**

Date Collected: 09/15/21 08:40 Date Received: 09/16/21 09:30

Method: EPA 8260D - Vola	atile Organic Compounds by	y GC/MS						
Analyte	Result Qualifier	RL	MDL Un	nit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND ND	1.0	0.60 ug	/L			09/25/21 17:10	1
1,1,2-Trichloroethane	ND	1.0	0.45 ug	/L			09/25/21 17:10	1
1.2-Dichloroethane	14	1.0	0.57 ug	/L			09/25/21 17:10	1

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Page 26 of 43

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW23(091521)47

Lab Sample ID: 180-127160-22

Date Collected: 09/15/21 08:40 **Matrix: Water**

Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 17:10	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 17:10	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 17:10	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 17:10	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 17:10	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		34 - 150					09/25/21 17:10	1
4-Bromofluorobenzene (Surr)	81		43 - 131					09/25/21 17:10	1
Dibromofluoromethane (Surr)	113		49 - 145					09/25/21 17:10	1
Toluene-d8 (Surr)	115		51 - 137					09/25/21 17:10	1
Method: EPA 300.0 R2.1 - A	Anions, Ion Ch	romatogra	phy						
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
0.15.4				IVIDE	•	U		Allalyzeu	DII Fac
Sulfate	51		1.0		mg/L			09/26/21 08:58	1 1
- T T T T T T T T T T T T T T T T T T T		otal Recov							
Sulfate : Method: EPA 6020B - Metal Analyte	ls (ICP/MS) - To	otal Recov			mg/L		Prepared		
Method: EPA 6020B - Metal	ls (ICP/MS) - To		erable	0.76	mg/L			09/26/21 08:58	1
Method: EPA 6020B - Metal Analyte Iron	Is (ICP/MS) - To Result 11000	Qualifier	erable RL	0.76	mg/L Unit		Prepared	09/26/21 08:58 Analyzed	1 Dil Fac
Method: EPA 6020B - Metal Analyte	Is (ICP/MS) - To Result 11000	Qualifier	erable RL	0.76	mg/L Unit ug/L		Prepared	09/26/21 08:58 Analyzed	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal	Is (ICP/MS) - To Result 11000	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte	Is (ICP/MS) - To Result 11000 Is (ICP/MS) - D Result	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L Unit	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43 Analyzed	Dil Fac
Method: EPA 6020B - Metal Analyte Iron Method: EPA 6020B - Metal Analyte Iron, Dissolved	Is (ICP/MS) - To Result 11000 Is (ICP/MS) - D Result 9700	Qualifier issolved	erable RL 50	0.76 MDL 20	mg/L Unit ug/L Unit ug/L	<u>D</u>	Prepared 10/01/21 10:03	09/26/21 08:58 Analyzed 10/02/21 10:43 Analyzed	1 Dil Fac

Client Sample ID: MW18(091521)31 Lab Sample ID: 180-127160-23

Date Collected: 09/15/21 09:40 Date Received: 09/16/21 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			09/25/21 17:32	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			09/25/21 17:32	1
1,2-Dichloroethane	1.1		1.0	0.57	ug/L			09/25/21 17:32	1
Chloroethane	ND		1.0	0.90	ug/L			09/25/21 17:32	1
Chloroform	ND		1.0	0.60	ug/L			09/25/21 17:32	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			09/25/21 17:32	1
Methylene Chloride	ND		1.0	0.89	ug/L			09/25/21 17:32	1
Trichloroethene	ND		1.0	0.69	ug/L			09/25/21 17:32	1
Vinyl chloride	ND		1.0	0.41	ug/L			09/25/21 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		34 - 150					09/25/21 17:32	1
4-Bromofluorobenzene (Surr)	74		43 - 131					09/25/21 17:32	1
Dibromofluoromethane (Surr)	107		49 - 145					09/25/21 17:32	1
Toluene-d8 (Surr)	109		51 - 137					09/25/21 17:32	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-127160-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW18(091521)31 Lab Sample ID: 180-127160-23

Date Collected: 09/15/21 09:40 **Matrix: Water**

Date Received: 09/16/21 09:30

Method: EPA 300.0 R2.1 - Anio		•	•	MDI	11-24	_	D	A I	D!! = -
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	15		1.0	0.76	mg/L			09/26/21 09:16	1
Method: EPA 6020B - Metals (ICP/MS) - To	otal Recover	able						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	18000		50	20	ug/L		10/01/21 10:03	10/02/21 10:47	1
Method: EPA 6020B - Metals (CP/MS) - D	issolved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	47	J	50	20	ug/L		09/30/21 14:16	10/02/21 16:10	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Eurofins TestAmerica, Pittsburgh

	CUSTODY Analytical Request Document		LAB USE ONLY- Affix Wor	korder/Login Label Here or List I	
Pace Analytical Chain-of-Cust	ody is a LEGAL DOCUMENT - Complete all relevent fields	4.77		Client ID: AGM-Gr	- Arcadis Greenville
Company: Arcadis	Billing Information:		ALL SHAD	SDG: 221091833	
Address: 7550 TeaqueRd.		0	Container Preservative T	PM: RWe	
Report To: fina armstrong	Email To:	** Preservat	ive Types: (1) nitric acid, (2) sul I, (7) sodium bisulfate, (8) sodiu	ım thiosulfate, (9) hexane, (A) ascorbi	c acid, (B) ammonium sulfate,
Copy To: Shwetha Sridharan	Site Collection Info/Address St.	(C) ammoniu	um hydroxide, (D) TSP, (U) Unpr Analyses	reserved, (O) Other Nag YO	4
Customer Project Name/Number:	State: County/City: Time Zone Collected:	r %-			ple Receipt Checklist:
3007 5892.02 Phone: Site/Facility ID #:	MD/ HavsedeGrace PT[]MT[]CT [Ge	SNO		Custody	Seals Present/Intact Y N NA Signatures Present Y N NA
Phone: Site/Facility ID #:	Cytec MYes [] No	601		Bottles	or Signature Present Y N NA Intact Y N NA Rottles Y N NA
Collected By (print): And Feild Purchase Order #: Quote #:	DW PWS ID #: DW Location Code:	7		Suffici	Bottles Y N NA Lent Volume Y N NA Received on Ice Y N NA
Collected By (signature): Turnaround Date Re		7 0		VOA - H USDA Re	Meadspace Acceptable Y N NA
Sample Disposal: Rush:	[Y Yes [] No Field Filtered (if applicable):	72		Residua	s in Holding Time Y N NA al Chlorine Present Y N NA
[] Dispose as appropriate [] Return [] Same Da	y [] Next Day [] Yes [No	3			pH Acceptable Y N NA
[] Hold: (Expedit	Day [] 4 Day [] 5 Day Analysis:				e Present Y N NA
* Matrix Codes (Insert in Matrix box below): Drinking W Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AF	R), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)	#		LAB USI	
Customer Sample ID Matrix * Gr	ab Composite Start) Composite End Cl Ctr	f .0		hab Sai	ipre # / conditions.
1112(20112)	9/14/21 1145 3	3			
MW3(091421) GW G MM 16/091421) GW G	11.79	3 3			2
DUPO 2/09/421) GW 6	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	3 3	150		3
	3/15/21/0750	3 7			7
MW 23 (091521)40 GW (3	d L		5
	C 9/15/21 6846 - 3				7
	S 9/15/21 1015	33		4 5 5	8
MW20D1(091521) CV 6 MW18 (091521) 24 (W)		? 3			9
		3 3		ib. ATT S.E.	lò
Customer Remarks / Special Conditions / Possible Hazar		SHO	ORT HOLDS PRESENT (<72 h	ours): Y N N/A	Lab Sample Temperature Info: Temp Blank Received: Y N NA
Trip Blank = 3x	Packing Material Used: 1194	Lab	Tracking #: 26	64534	Therm ID#: oC Cooler 1 Temp Upon Receipt: oC
	Radchem sample(s) screened (<500 cpm): Y N	NA San	nples received via: FEDEX UPS Client	Courier Pace Courier	Cooler 1 Therm Corr. Factor:oC Cooler 1 Corrected Temp:oC
	Date/Time: Received by/Company: (Signature)		FEDEX UPS Client Date/Time:	MTJL LAB USE ONLY	Comments:
Relinquished by Company (Signature)				Table #: Acctnum:	2.3 E34 37cpm
Relinquished by/Gompany: (Signature)	Date/Time: Received by/Company://signature		Date/Time: 9/16/1700	Template:	Trip Blank Received: Y N NA HCL MeOH TSP Other
redex	9/16/21 700 Certification (Signature		Date/Time:	Prelogin:	
Relinquished by/Company: (Signature)	Date/Time: Received by/Company: (Signature		Sate/ Illie	PM: PB:	Non Conformance(s): Page: YES / NO of:



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW3 (091421) Collect Date 09/14/2021 11:45 Lab ID 22109183301

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run	Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/2	21 18:07	721853	AWE	
CAS#	Parameter			Result		DL	LOQ	Units
74-84-0	Ethane			1.5		0.17	1.0	ug/L
74-85-1	Ethene			20	J	0.24	1.0	ug/L
74-82-8	Methane			53		2.0	5.0	ug/L

MW16 (091421) Collect Date 09/14/2021 13:50 Lab ID 22109183302

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:18	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			7.8	0.17	1.0	ug/L
74-85-1	Ethene			1.0	0.24	1.0	ug/L
74-82-8	Methane			74	2.0	5.0	ug/L

DUD02 (001421)	Collect Date	09/14/2021 13:00	Lab ID	22109183303
DUP02 (091421)	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:29	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			1.8	0.17	1.0	ug/L
74-85-1	Ethene			32 J	0.24	1.0	ug/L
74-82-8	Methane			59	2.0	5.0	ug/L

M/M/4/1 (004524)	Collect Date	09/15/2021 07:50	Lab ID	22109183304
MW14I (091521)	Receive Date	09/16/2021 12:00	Matrix	Water

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:40	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.48J	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW14I (091521) Collect Date 09/15/2021 07:50 Lab ID 22109183304

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:40	721853	AWE	
CAS# 74-82-8	Parameter Methane			Result 72	DL 2.0	LOQ 5.0	Units ug/L

MW23 (091521) 40 Collect Date 09/15/2021 08:30 Lab ID 22109183305

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 18:52	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.52J	0.17	1.0	ug/L
74-85-1	Ethene			0.26J	0.24	1.0	ug/L
74-82-8	Methane			8.4 UB	-2.0	5.0 -	ug/L

MW22 (004524)47	Collect Date	09/15/2021 08:40	Lab ID	22109183306	
MW23 (091521)47	Receive Date	09/16/2021 12:00	Matrix	Water	

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:03	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.85J	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			11	2.0	5.0	ua/L

MM/27 (004524)	Collect Date	09/15/2021 10:15	Lab ID 221091833 Matrix Water	22109183307
MW27 (091521)	Receive Date	09/16/2021 12:00	Matrix	Water

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:15	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.45J	0.17	1.0	ug/L
74-85-1	Ethene			760	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

MW27 (091521) Collect Date 09/15/2021 10:15 Lab ID 22109183307

Receive Date 09/16/2021 12:00 Matrix Water

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:15	721853	AWE	
CAS# 74-82-8	Parameter Methane			Result 75	DL 2.0	LOQ 5.0	Units ug/L

MW20D4 (004524)	Collect Date	09/15/2021 09:10	Lab ID	22109183308
MW20D1 (091521)	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:26	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.35J	0.24	1.0	ug/L
74-82-8	Methane			120	2.0	5.0	ug/L

MW48 (004524)24	Collect Date	09/15/2021 09:30	Lab ID	22109183309
MW18 (091521)24	Receive Date	09/16/2021 12:00	Matrix	Water

AM20GAX

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:37	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane		5.0 UB	2.8J	2.0	5.0	ug/L

MMM49 (004524)24	Collect Date	09/15/2021 09:40	Lab ID 22109183310 Matrix Water	22109183310
MW18 (091521)31	Receive Date	09/16/2021 12:00	Matrix	Water

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:49	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L



Project ID: 30075892.02 Cytec **Report Date:** 09/28/2021

Sample Results

AM20GAX (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 19:49	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-82-8	Methane		5.0 UB	2.9J	2.0	5.0	ug/L

TRIP BLANK	Collect Date	09/14/2021 00:01	Lab ID	22109183311
IRIP BLANK	Receive Date	09/16/2021 12:00	Matrix	Water

Prep Date	Prep Batch	Prep Method	Dilution	Run Date	Run Batch	Analyst	%Moisture
NA	NA	NA	1	09/27/21 20:00	721853	AWE	
CAS#	Parameter			Result	DL	LOQ	Units
74-84-0	Ethane			0.17U	0.17	1.0	ug/L
74-85-1	Ethene			0.24U	0.24	1.0	ug/L
74-82-8	Methane			2.0J	2.0	5.0	ug/L



Cytec Solvay Group

DATA REVIEW

Havre de Grace, Maryland

Volatile Organic Compound (VOC), Metals and Miscellaneous

SDGs # 180-129307-1

Analyses Performed By: TestAmerica Laboratories, Inc. Pittsburgh, PA

Report # 43512R Review Level: Tier II Project: 30077106.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) 180-129307-1 for samples collected in association with the Havre de Grace site in Maryland. The review was conducted as a Tier II evaluation and included review of data package completeness as required under USEPA Region III M3 validation. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

	Sample		Analysis				
Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	VOC	MET	MISC
MW-19DI (102921)	180-129307-1	Water	10/29/21		Χ	X	Χ
TRIP BLANK	180-129307-2	Water	10/29/21		X		

Note:

VOC - Volatile Organic Compound

MET - Metal analysis includes total and dissolved iron

MISC - Miscellaneous analysis includes sulfate and total organic carbon.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Rep	Reported		rmance ptable	Not
	No	Yes	No	Yes	Required
Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
Master tracking list		X		Х	
4. Methods of analysis		X		Х	
5. Reporting limits		Х		Х	
6. Sample collection date		Х		Х	
7. Laboratory sample received date		Х		Х	
8. Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form		Х		Х	
11. Narrative summary of QA or sample problems provided		Х		Х	
12. Data Package Completeness and Compliance		Х		Х	

Note:

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260D. All samples in this data set were subjected to M3 (Tier III) level data validation for organic compounds, as defined in the USEPA Region III Innovative Approaches to Data Validation (June 1995). Validation was performed following the procedures specified in Region III Modifications to National Functional Guidelines for Organic Data Review (September 1994) and USEPA. National Functional Guidelines for Organics Analyses (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

Concentration (C) Qualifiers

- U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
- B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

Quantitation (Q) Qualifiers

- E The compound was quantitated above the calibration range.
- D Concentration is based on a diluted sample analysis.

Validation Qualifiers

- J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
- JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
- UB Compound considered non-detect at the listed value due to associated blank contamination.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- K The compound was positively identified; however, the associated numerical value is an estimated concentration only and the reported value may be biased high. Actual concentration is expected lower.
- L The compound was positively identified; however, the associated numerical value is an estimated concentration only and the reported value may be biased low. Actual concentration is expected lower.

R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSIS

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW846 8260D	Water	14 days from collection to analysis	Cool to < 6°C; preserved to a pH of less than 2 s.u.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

MS/MSD analysis was not performed on samples from this SDG.

5. Laboratory Control Sample (LCS) Analyses

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery and RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW846 8260D	Rep	orted		rmance ptable	Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY	(GC/MS)				
Tier II Validation					
Holding times		Х		Х	
Reporting limits (units)		Х		Х	
Blanks					
A. Method blanks		Х		Х	
B. Equipment blanks	Х				Х
C. Trip blanks		Х		Х	
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R	Х				Х
LCS/LCSD Precision (RPD)	Х				Х
Matrix Spike (MS) %R	Х				Х
Matrix Spike Duplicate (MSD) %R	Х				Х
MS/MSD Precision (RPD)	Х				Х
Lab Duplicate (RPD)	Х				Х
Field Duplicate (RPD)	Х				Х
Surrogate Spike Recoveries		Х		Х	
Dilution Factor		Х		Х	

Notes:

%R Percent recovery

RPD Relative percent difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6020B, 300.0 and 9060A. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

Concentration (C) Qualifiers

- U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
- J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).

Quantitation (Q) Qualifiers

- E The reported value is estimated due to the presence of interference.
- N Spiked sample recovery is not within control limits.
- * Duplicate analysis is not within control limits.

Validation Qualifiers

- J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
- UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
- UB Analyte is considered non-detect at the listed value due to associated blank contamination.
- R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020B	Water	180 days from collection to analysis	Cool to < 6 C; pH <2 with HNO3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MS/MSD) / Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and the laboratory qualifier will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on sample from this SDG.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

The laboratory duplicate was not performed on sample from this SDG.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent

sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for sample from this SDG.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All LCS recoveries were within control limits.

6. Serial Dilution

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

The serial dilution analysis was not performed on a sample from this SDG.

7. General Assessment - Total vs. Dissolved

When the dissolved concentration exceeded the associated total concentration, and both results were five times greater than the LOQ, then the %D between the total and dissolved concentrations must be less than 10%.

The calculated %D between the total and the dissolved sample results were within the control limit.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METAL

METALS; SW-846 6020B	Repo	orted	_	rmance ptable	Not
	No	Yes	No	Yes	Required

Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES)

Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

Atomic Absorption – Manual Cold Vapor (CV)

Tier II Validation				
Holding Times		X	X	
Reporting limits (units)		X	X	
Blanks				
A. Instrument Blanks		Х	X	
B. Method Blanks		Х	X	
C. Equipment/Field Blanks		Х	X	
Laboratory Control Sample (LCS)		Х	X	
Laboratory Control Sample Duplicate (LCSD) %R	X			Х
LCS/LCSD Precision (RPD)	X			Х
Matrix Spike (MS) %R	X			Х
Matrix Spike Duplicate (MSD) %R	X			Х
MS/MSD Precision (RPD)	X			Х
Lab Duplicate (RPD)	X			Х
Field Duplicate (RPD)	X			Х
ICP Serial Dilution %D	X			Х
Total vs. Dissolved		Х	X	
Reporting Limit Verification		X	X	

Notes:

%R = Percent recovery

RPD = Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to <6 °C.
Total Organic Carbon (TOC) by EPA 9060A	Water	28 days from collection to analysis	Cool to <6 °C; pH of <2

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) / Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

MS/MSD analysis was performed on sample MW-19DI (102921) for the Sulfate analysis. The MS/MSD analysis exhibited acceptable recoveries and RPD.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one times the RL is applied for water matrices and two times the RL for soil matrices.

The laboratory duplicate analysis was not performed on any of the samples from this SDG.

DATA USABILITY SUMMARY REPORT

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for the sample from this SDG.

5. Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA USABILITY SUMMARY REPORT

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 300.0 and SM	Rep	orted		mance ptable	Not
9060A	No	Yes	No	Yes	Required
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks	Х				Х
Laboratory Control Sample (LCS) %R		Х		Х	
Laboratory Control Sample Duplicate (LCSD) %R		Х		Х	
LCS/LCSD Precision (RPD)		Х		Х	
Matrix Spike (MS) %R		Х		Х	
Matrix Spike Duplicate (MSD) %R		Х		Х	
MS/MSD Precision (RPD)		Х		Х	
Lab Duplicate (RPD)	Х				Х
Field Duplicate (RPD)	Х				Х
Dilution Factor		Х		Х	
Moisture Content		Х		Х	

Notes:

%R - percent recovery

RPD - relative percent difference,

%D – difference

DATA USABILITY SUMMARY REPORT

VALIDATION PERFORMED BY: Hrishikesh Upadhyaya

SIGNATURE:

DATE: November 23, 2021

PEER REVIEW: Rachelle Borne

DATE: November 30, 2021

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Chain of Custody Record

Baltimore #201

🔆 eurofins

Environment Testing America

Phone: 412-963-7058 Fax: 412-963-2468				
Client Information	Sampler: Lule Berstein	Lab PM: Colussy, Jill L	Carrier Tracking No(s):	COC No: 180-75506-14547.1
Client Contact: Ms. Shwetha Sridharan	Phone: 443-542-8667	E-Mail: Jill.Colussy@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: ARCADIS U.S., Inc.	PWSID:		s Requested	Job#:
ARCADIS U.S., IIIC.	Due Date Requested:	Allalysis	Requested	Preservation Codes:
7550 Teague Road Suite 210	Due Date Requested:	<u> </u>		A - HCL M - Hexane
City: Hanover	TAT Requested (days).			B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zip:	Compliance Project: Δ Yes Δ No			D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
MD, 21076 Phone:	PO #:	- 10 CC CC CC CC CC CC CC CC CC CC CC CC CC		F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4
302-897-8993(Tel)	30005455.0002.	100 VOC 000 000 000 000 000 000 000 000 000 0		H - Ascorbic Acid T - TSP Dodecahydrate
Email: shwetha.sridharan@arcadis.com	WO #:			I - Ice U - Acetone J - DI Water V - MCAA
Project Name:	Project #:	SD (Yes or No		K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:
Cytec Havre de Grace MD Site:	18017987 SSOW#:	mple (Yes of Conf.)		Other:
Pennsylvania CyteC				5
3	Sample N	Site Specific Sulfate Tron Dissolve Iron Total Tron Tron Total Tron Total Tron Total Tron Total Tron Total Tron Total Tron Total Tron Total Tron Total Tron Total Tron Tron Total Tron Tron Tron Tron Tron Tron Tron Tron		Special Instructions/Note:
	1 1960	Hatrix Newster, Specific Service Analy Service An		2
Sample Identification	Sample C=comp, o= Sample Date Time G=grab) BT=TO	Sesolid, We stude to Sesolid S		Special Instructions/Note:
Secretary and the secretary an	Preservation			X
MW-19D1 (102921)	10/29/21/1000 G	W 31112		
(10) (100) (10)				
				
				At Principal
	Auto-			
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
		- 		
		180-129307 Ch	ain of Custody	
		180-125651 5.11		
		- 		
Possible Hazard Identification	Poison B Unknown Radiological	Return To Client	y be assessed if samples are ret	
Non-Hazard Flammable Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)	Poison B Unknown Radiological	Special Instructions/QC Requ	irements:	Archive For Months
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	1
Relinquished by: Kyrc Berstein Annual	Pate/Time:	pany Received by:	Date/Time:	1 1318 COMPANY
Relinquished by:	Date/Time: 179 Com	pany Received by:	Date/Times	Combany
Relinquished by:	Date/Time: Com	plany Received by:	Date/Time:	
Kemiquioried by.	Com	party Traceived by.	Date/Time:	CO 3
Custody Seals Intact: Custody Seal No.:		Cooler Temperature(s) °C and C	ther Remarks:	
Δ Yes Δ No				

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: MW-19DI (102921)

Lab Sample ID: 180-129307-1 Date Collected: 10/29/21 10:00

Date Received: 10/30/21 10:30

Date Received: 10/30/21 10:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/10/21 16:36	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/10/21 16:36	1
1,2-Dichloroethane	30		1.0	0.57	ug/L			11/10/21 16:36	1
Chloroethane	ND		1.0	0.90	ug/L			11/10/21 16:36	1
Chloroform	ND		1.0	0.60	ug/L			11/10/21 16:36	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			11/10/21 16:36	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/10/21 16:36	1
Trichloroethene	ND		1.0	0.69	ug/L			11/10/21 16:36	1
Vinyl chloride	ND		1.0	0.41	ug/L			11/10/21 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		26 - 156					11/10/21 16:36	1
4-Bromofluorobenzene (Surr)	103		36 - 124					11/10/21 16:36	1
Dibromofluoromethane (Surr)	83		46 - 149					11/10/21 16:36	1
Toluene-d8 (Surr)	111		40 - 146					11/10/21 16:36	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	36	FK -	1.0	0.76	mg/L			10/31/21 20:02	
Method: EPA 6020B - Metals (CP/MS) - To	tal Recover	able						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
ron	36000	72	50	20	ug/L		11/12/21 11:00	11/13/21 21:26	
Method: EPA 6020B - Metals (CP/MS) - Di	ssolved							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Iron	59		50	20	ug/L		11/12/21 09:25	11/13/21 14:11	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.7		1.0	0.51	ma/L			11/02/21 20:45	

Client Sample ID: TRIP BLANK Lab Sample ID: 180-129307-2 Date Collected: 10/29/21 00:00 **Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.60	ug/L			11/10/21 16:10	1
1,1,2-Trichloroethane	ND		1.0	0.45	ug/L			11/10/21 16:10	1
1,2-Dichloroethane	ND		1.0	0.57	ug/L			11/10/21 16:10	1
Chloroethane	ND		1.0	0.90	ug/L			11/10/21 16:10	1
Chloroform	ND		1.0	0.60	ug/L			11/10/21 16:10	1
cis-1,2-Dichloroethene	ND		1.0	0.71	ug/L			11/10/21 16:10	1
Methylene Chloride	ND		1.0	0.89	ug/L			11/10/21 16:10	1
Trichloroethene	ND		1.0	0.69	ug/L			11/10/21 16:10	1
Vinyl chloride	ND		1.0	0.41	ug/L			11/10/21 16:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		26 - 156			•		11/10/21 16:10	1
4-Bromofluorobenzene (Surr)	106		36 - 124					11/10/21 16:10	1

Eurofins TestAmerica, Pittsburgh

Page 9 of 18

Matrix: Water

Client Sample Results

Client: ARCADIS U.S., Inc. Job ID: 180-129307-1

Project/Site: Cytec Havre de Grace MD

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-129307-2

Date Collected: 10/29/21 00:00 Matrix: Water

Date Received: 10/30/21 10:30

Method: EPA 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepa	red An	alyzed	Dil Fac
Dibromofluoromethane (Surr)	87		46 - 149		11/10)/21 16:10	1
Toluene-d8 (Surr)	102		40 - 146		11/10	/21 16:10	1

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Appendix F

Groundwater Stabilization System Details



Ext	traction Well ID:		MW-	10D (28 to 3	0 feet bgs)					EW-1 (40 to	o 45 feet bgs)					EW-2 (24 to	o 32 feet bgs)			Total	Total Mass of	Total Magaza
		Total Extracted	Average Flow	1,2	P-DCA	ı	MC	Total	Average	1,2	P-DCA		MC	Total	Average	1,2	P-DCA		MC	Total Extracted	Total Mass of 1,2-DCA	Total Mass o
	Date ¹	Volume	Rate	Result ²	Mass Removed	Result ²	Mass Removed	Extracted Volume	Flow Rate	Result ²	Mass Removed	Result ²	Mass Removed	Extracted Volume	Flow Rate	Result ²	Mass Removed	Result ²	Mass Removed	Volume	Removed	Removed
		gallons	gpm	μg/L	lbs	μg/L	lbs	gallons	gpm	μg/L	lbs	μg/L	lbs	gallons	gpm	μg/L	lbs	μg/L	lbs	gallons	lbs	lbs
st Quarter	1/1/2015	0	3.06	2	0.000	0	0	0	1.01	1,900	0.00	33	0.000	0	0.15	79,000	0.00	260,000	0.00	0	0.00	0.00
2015 –	2/1/2015	136,727	5.47	2	0.002	0	0	45,307	0.43	1,900	0.72	33	0.012	6,660	0.25	79,000	4.38	260,000	14.43	188,694	5.10	14.44
2010	3/1/2015	357,230	5.78	2	0.006	0	0	62,740	2.01	1,900	0.99	33	0.017	16,722	0.25	79,000	11.01	260,000	36.23	436,692	12.01	36.25
2nd	4/3/2015	615,335	5.47	160	0.344	14	0.030	152,549	1.81	2,100	1.57	270	0.202	27,747	0.24	51,000	4.69	110,000	10.11	795,631	6.60	10.34
Quarter	5/1/2015	851,672	5.97	160	0.32	14	0.028	230,645	1.98	2,100	1.37	270	0.176	38,277	0.28	51,000	4.48	110,000	9.65	1,120,594	6.16	9.86
2015	6/1/2015	1,117,996	5.93	160	0.36	14	0.031	318,850	1.81	2,100	1.54	270	0.198	50,802	0.27	51,000	5.32	110,000	11.48	1,487,648	7.22	11.71
3rd	7/1/2015	1,374,034	6.99	110	0.23	0	0	397,010	1.98	1,800	1.17	0	0	62,432	0.29	150,000	14.54	370,000	35.86	1,833,476	15.94	35.86
Quarter	8/1/2015	1,685,951	6.41	110	0.29	0	0	485,408	1.86	1,800	1.33	0	0	75,481	0.60	150,000	16.31	370,000	40.24	2,246,840	17.92	40.24
2015	9/1/2015	1,971,907	4.97	110	0.26	0	0	568,608	1.79	1,800	1.25	0	0	102,197	0.41	150,000	33.40	370,000	82.38	2,642,712	34.91	82.38
th Quarter	10/1/2015	2,186,543	5.75	38	0.07	0	0	645,776	1.72	1,400	0.90	31	0.020	120,082	0.32	43,000	6.41	82,000	12.22	2,952,401	7.38	12.24
2015	11/1/2015	2,443,223	1.55	38	0.08	0	0	722,532	0.50	1,400	0.90	31	0.020	134,568	0.17	43,000	5.19	82,000	9.90	3,300,323	6.17	9.92
	12/1/2015	2,510,237	7.01	38	0.02	0	0	744,186	1.99	1,400	0.25	31	0.006	141,946	0.62	43,000	2.64	82,000	5.04	3,396,369	2.92	5.05
st Quarter	1/1/2016	2,823,134	6.99	58	0.15	1.1	0.003	833,039	1.99	1,700	1.26	65	0.048	169,450	1.09	29,000	6.65	59,000	13.52	3,825,623	8.06	13.57
2016	2/1/2016	3,135,138	6.63	58	0.15	1.1	0.003	921,659	1.88	1,700	1.26	65	0.048	218,030	1.00	29,000	11.74	59,000	23.89	4,274,827	13.15	23.94
	3/1/2016	3,412,113	6.30	58	0.13	1.1	0.003	1,000,317	1.79	1,700	1.11	65	0.043	259,958	0.64	29,000	10.13	59,000	20.61	4,672,388	11.38	20.66
2nd	4/1/2016	3,693,336	6.98	19	0.04	0	0	1,080,173	1.98	1,800	1.20	29	0.019	288,625	0.43	21,000	5.02	39,000	9.32	5,062,134	6.26	9.34
Quarter	5/1/2016	3,994,872	7.00	19	0.05	0	0	1,165,725	1.98	1,800	1.28	29	0.021	307,201	0.38	21,000	3.25	39,000	6.04	5,467,798	4.58	6.06
2016	6/1/2016	4,307,169	6.83	19	0.05	0	0	1,254,252	1.95	1,800	1.33	29	0.021	324,347	0.34	21,000	3.00	39,000	5.57	5,885,768	4.38	5.59
3rd	7/1/2016	4,602,440	3.75	12	0.03	0	0	1,338,669	1.05	1,700	1.20	49	0.034	339,027	0.23	19,000	2.32	25,000	3.06	6,280,136	3.55	3.09
Quarter	8/1/2016	4,769,782	6.33	12	0.02	0	0	1,385,380	1.81	1,700	0.66	49	0.019	349,219	0.21	19,000	1.61	25,000	2.12	6,504,381	2.29	2.14
2016	9/1/2016	5,052,501	5.77	12	0.03	0	0	1,465,979	1.62	1,700	1.14	49	0.033	358,606	0.15	19,000	1.49	25,000	1.96	6,877,086	2.66	1.99
th Quarter	10/1/2016	5,301,578	6.89	62	0.13	0	0	1,535,780	1.84	1,400	0.81	0	0	364,962	0.21	33,000	1.75	76,000	4.03	7,202,320	2.69	4.03
2016	11/1/2016	5,608,954	5.82	62	0.16	0	0	1,617,770	1.36	1,400	0.96	0	0	374,551	0.15	33,000	2.64	76,000	6.07	7,601,275	3.75	6.07
20.0	12/1/2016	5,860,409	2.39	62	0.13	0	0	1,676,316	0.57	1,400	0.68	0	0	380,827	0.04	33,000	1.73	76,000	3.97	7,917,552	2.54	3.97
st Quarter	1/1/2017	5,967,051	4.69	23	0.02	0	0	1,701,943	1.05	1,600	0.34	0	0	382,746	0.59	29,000	0.46	55,000	0.88	8,051,740	0.83	0.88
2017	2/1/2017	6,176,352	6.34	23	0.04	0	0	1,749,033	1.35	1,600	0.63	0	0	408,971	1.67	29,000	6.34	55,000	12.02	8,334,356	7.01	12.02
2017	3/1/2017	6,431,784	6.85	23	0.05	0	0	1,803,562	1.94	1,600	0.73	0	0	476,412	1.95	29,000	16.30	55,000	30.91	8,711,758	17.07	30.91
2nd	4/1/2017	6,737,487	6.99	8.9	0.02	0	0	1,890,014	1.97	1,300	0.94	0	0	563,333	1.77	13,000	9.42	22,000	15.94	9,190,834	10.38	15.94
Quarter	5/1/2017	7,039,278	5.52	8.9	0.02	0	0	1,975,277	1.41	1,300	0.92	0	0	639,629	0.15	13,000	8.27	22,000	13.99	9,654,184	9.21	13.99
2017	6/1/2017	7,285,728	5.75	8.9	0.02	0	0	2,038,361	1.38	1,300	0.68	0	0	646,309	0.00	13,000	0.72	22,000	1.22	9,970,398	1.43	1.22
3rd	7/1/2017	7,534,069	2.66	43	0.09	0	0	2,098,189	0.64	1,500	0.75	0	0	646,310	0.00	NS	0.00	NS	0.00	10,278,568	0.84	0.00
Quarter	8/1/2017	7,652,980	6.31	43	0.04	0	0	2,126,815	1.52	1,500	0.36	0	0	646,310	0.00	NS	0.00	NS	0.00	10,426,105	0.40	0.00
2017	9/1/2017	7,934,505	5.56	43	0.10	0	0	2,194,635	1.34	1,500	0.85	0	0	646,310	0.32	NS	0.00	NS	0.00	10,775,450	0.95	0.00
th Ouerter	10/1/2017	8,174,670	6.13	3.6	0.01	0	0	2,252,530	1.86	1,100	0.53	19	0.009	660,009	2.75	43,000	4.91	110,000	12.56	11,087,209	5.45	12.57
th Quarter 2017	11/1/2017	8,448,409	6.93	3.6	0.01	0	0	2,335,372	1.90	1,100	0.76	19	0.013	782,905	1.24	43,000	44.04	110,000	112.66	11,566,686	44.81	112.67
2017	12/1/2017	8,747,857	6.73	3.6	0.01	0	0	2,417,470	1.79	1,100	0.75	19	0.013	836,553	1.31	43,000	19.22	110,000	49.18	12,001,880	19.99	49.19
st Quarter	1/1/2018	9,048,175	5.07	11	0.03	0	0	2,497,585	0.62	1,600	1.07	78	0	895,254	0.97	15,000	7.34	23,000	11.25	12,441,014	8.43	11.30
2018 ³	2/1/2018	9,274,446	5.41	11	0.02	0	0	2,525,387	0.46	1,600	0.37	78	0	938,695	1.08	15,000	5.43	23,000	8.33	12,738,528	5.82	8.34
2010	3/1/2018	9,492,572	5.57	11	0.02	0	0	2,544,050	0.02	1,600	0.25	78	0	982,090	0.83	15,000	5.42	23,000	8.32	13,018,712	5.69	8.33
2nd	4/1/2018	9,741,020	6.22	11	0.02	0	0	2,544,980	0.00	1,600	0.01	78	0	1,018,959	0.65	15,000	4.61	23,000	7.07	13,304,959	4.64	7.07
Quarter	5/1/2018	10,009,819	4.61	11	0.02	0	0	2,544,999	0.09	1,600	0.0003	78	0	1,046,910	0.77	15,000	3.49	23,000	5.36	13,601,728	3.52	5.36
2018	6/1/2018	10,215,723	2.32	11	0.02	0	0	2,548,980	0.07	1,600	0.05	78	0	1,081,069	0.62	15,000	4.27	23,000	6.55	13,845,772	4.34	6.55
3rd	7/1/2018	10,316,112	1.86	11	0.01	0	0	2,552,115	0.21	1,600	0.04	78	0	1,107,848	0.01	15,000	3.35	23,000	5.13	13,976,075	3.40	5.13
Quarter	8/1/2018	10,399,332	3.12	11	0.01	0	0	2,561,534	0.00	1,600	0.13	78	0	1,108,423	0.48	15,000	0.07	23,000	0.11	14,069,289	0.21	0.12
2018	9/1/2018	10,538,569	2.05	11	0.01	0	0	2,561,534	0.00	1,600	0	78	0	1,130,059	0.35	15,000	2.70	23,000	4.15	14,230,162	2.72	4.15
th Ouerter	10/1/2018	10,626,996	3.82	5.7	0.004	0	0	2,561,534	1.30	580	0	0	0	1,145,179	0.62	18,000	2.27	49,000	6.17	14,333,709	2.27	6.17
th Quarter	11/1/2018	10,797,508	3.85	5.7	0.01	0	0	2,619,587	1.92	580	0.28	0	0	1,172,722	0.57	18,000	4.13	49,000	11.25	14,589,817	4.42	11.25
2018 ³	12/1/2018	10,964,039	4.05	5.7	0.01	0	0	2,702,501	1.77	580	0.40	0	0	1,197,557	0.39	18,000	3.73	49,000	10.14	14,864,097	4.13	10.14

Appendix F GW Stabilization System Details



Ex	traction Well ID:		MW-	-10D (28 to 3	0 feet bgs)					EW-1 (40 to	45 feet bgs)					EW-2 (24 to	32 feet bgs)			Total	Total Mass of	Total Massa
		Total Extracted	Average Flow	1,2	-DCA	ı	MC	Total	Avorago	1,2	-DCA		MC	Total	Avorago	1,2	-DCA	N	IC	Total Extracted	Total Mass of 1,2-DCA	Total Mass o
	Date ¹	Volume	Average Flow Rate	Result ²	Mass Removed	Result ²	Mass Removed	Extracted Volume	Average Flow Rate	Result ²	Mass Removed	Result ²	Mass Removed	Extracted Volume	Average Flow Rate	Result ²	Mass Removed	Result ²	Mass Removed	Volume	Removed	Removed
		gallons	gpm	μg/L	lbs	μg/L	lbs	gallons	gpm	μg/L	Ibs	μg/L	lbs	gallons	gpm	μg/L	lbs	μg/L	lbs	gallons	lbs	lbs
at Ouartar	1/1/2019	11,144,776	2.74	1.5	0.002	0	0	2,781,647	1.26	940	0.62	0	0	1,214,818	0.31	12,000	1.73	22,000	3.16	15,141,241	2.35	3.16
st Quarter 2019	2/1/2019	11,267,066	3.78	1.5	0.002	0	0	2,838,080	1.69	940	0.44	0	0	1,228,647	0.52	12,000	1.38	22,000	2.54	15,333,793	1.83	2.54
2010	3/1/2019	11,419,645	1.04	1.5	0.002	0	0	2,906,339	1.32	940	0.53	0	0	1,249,766	0.44	12,000	2.11	22,000	3.87	15,575,750	2.65	3.87
2nd	4/1/2019	11,466,144	7.86	1.4	0.001	0	0	2,965,250	2.00	900	0.44	0	0	1,269,291	0.44	13,000	2.12	12,000	1.95	15,700,685	2.56	1.95
Quarter	5/1/2019	11,805,830	6.66	1.4	0.004	0	0	3,051,577	1.48	900	0.65	0	0	1,288,354	0.21	13,000	2.07	12,000	1.91	16,145,761	2.72	1.91
2019	6/1/2019	12,103,165	5.57	1.4	0.003	0	0	3,117,483	1.27	900	0.49	0	0	1,297,948	0.15	13,000	1.04	12,000	0.96	16,518,596	1.54	0.96
3rd	7/1/2019	12,343,821	6.95	0	0.000	0	0	3,172,189	1.58	910	0.41	0	0	1,304,275	0.18	21,000	1.11	38,000	2.00	16,820,285	1.52	2.00
Quarter 2019	8/1/2019	12,654,193	5.78	0.0	0.000	0	0	3,242,576	1.12	910	0.53	0	0	1,312,110	1.82	21,000	1.37	38,000	2.48	17,208,879	1.90	2.48
2013	9/1/2019	12,912,347	6.39	1.2	0.003	0	0	3,292,427	0.95	910	0.38	0	0	1,393,214	2.47	21,000	14.19	38,000	25.68	17,597,988	14.57	25.68
th Quarter	10/1/2019 11/1/2019	13,188,603 13,469,069	6.28 7.86	1.9 1.9	0.004	0	0	3,333,455 3,375,192	0.93	540 540	0.18	0	0	1,500,098 1,595,726	2.14	21,000 21,000	18.70 16.74	38,000 38,000	33.85 30.28	18,022,156 18,439,987	18.89 16.93	33.85 30.28
2019	12/1/2019	13,808,795	2.73	1.9	0.004	0	0	3,425,741	0.45	540 540	0.19	0	0	1,686,656	0.96	21,000	15.91	38,000	28.79	18,921,192	16.15	28.79
	1/1/2020	13,930,446	6.02	6.6	0.007	0	0	3,445,778	0.90	790	0.13	0	0	1,729,535	2.32	19,000	6.79	34,000	12.15	19,105,759	6.93	12.15
st Quarter	2/1/2020	14,199,192	6.43	6.6	0.01	0	0	3,485,899	1.01	790	0.26	0	0	1,832,945	2.49	19,000	16.37	34,000	29.30	19,518,036	16.65	29.30
2020	3/1/2020	14,467,584	6.50	6.6	0.01	0	0	3,528,124	0.88	790	0.28	0	0	1,936,882	3.96	19,000	16.46	34,000	29.45	19,932,590	16.75	29.45
2nd	4/1/2020	14,757,940	5.44	3.7	0.01	0	0	3,567,497	0.83	270	0.09	0	0	2,113,602	3.14	4,900	7.22	3,000	4.42	20,439,039	7.31	4.42
Quarter	5/1/2020	14,993,041	7.52	3.7	0.01	0	0	3,603,281	1.18	270	0.08	0	0	2,249,331	3.61	4,900	5.54	3,000	3.39	20,845,653	5.63	3.39
2020	6/1/2020	15,328,622	7.13	3.7	0.01	0	0	3,655,924	1.06	270	0.12	0	0	2,410,444	1.74	4,900	6.58	3,000	4.03	21,394,990	6.71	4.03
2-4	7/1/2020	15,636,607	5.86	4.6	0.01	0	0	3,701,753	0.88	550	0.12	0	0	2,485,722	0.67					21,824,082	0.22	0.00
3rd Quarter	8/1/2020	15,898,145	3.49	4.6	0.01	0	0	3,740,899	0.65	550	0.21	0	0	2,515,510	2.27					22,154,554	0.19	0.00
2020			3.86			0	0					0	0									0.00
	9/1/2020	16,054,155		4.6 3.5	0.01	0	0	3,769,762	0.72	500 240	0.12	0	0	2,616,679	1.44			710		22,440,596	0.13 1.57	0.00
th Quarter	10/1/2020	16,220,783	6.25		0.005			3,800,771	1.14		0.06	0	0	2,678,846	0.52	2,900	1.50		0.37	22,700,400		
2020	11/1/2020 12/1/2020	16,499,657 16,753,269	5.87 4.45	3.5 3.5	0.008	0	0	3,851,779 3,897,720	1.06 0.81	240 240	0.10	0	0	2,702,011 2,769,074	1.55 1.42	2,900 2,900	0.56 1.62	710 710	0.14	23,053,447 23,420,063	0.67 1.72	0.14 0.40
					_	0	0					-										6.85
st Quarter	1/1/2021 2/1/2021	16,951,756 17,239,930	6.46 3.18	2.4	0.004	0	0	3,934,054 3,986,730	1.18 0.54	820 820	0.25	0	0	2,832,342 2,868,965	0.82	9,000	4.75 2.75	13,000 13,000	6.85 3.97	23,718,152 24,095,625	5.00 3.11	3.97
2021	3/1/2021	17,372,603	5.10	2.4	0.00	0	0	4,009,277	0.86	820	0.15	0	0	2,906,484	1.39	9,000	2.73	13,000	4.06	24,288,364	2.97	4.06
			6.44			-	0						0		1.67						9.28	5.53
2nd Quarter	4/1/2021	17,600,157		83	0.16	110		4,047,549	1.07	1,100	0.35	500	0	2,968,418		17,000	8.77	10,000	5.16	24,616,124		
2021	5/1/2021	17,878,323	6.55 3.73	83 83	0.19	110	0	4,093,768	1.12	1,100	0.42	500	0	3,040,676	1.48	17,000	10.24	10,000	6.02	25,012,767	10.85	6.47
	6/1/2021	18,170,555			0.20	110		4,143,873	0.63	1,100	0.46	500	0	3,106,950	1.27	17,000	9.39	10,000	5.52	25,421,378	10.05	6.00
3rd Quarter	7/1/2021	18,331,696	1.43	1.0	0.00	0	0	4,171,167	0.27	130	0.03	0	0	3,161,794	0.52	1,800	0.82	3,200	1.46	25,664,657	0.85	1.46
2021	8/1/2021	18,395,419	2.99	1.0	0.00	0	0	4,183,051	0.56	130	0.01	0	0	3,184,818	1.16	1,800	0.35	3,200	0.61	25,763,288	0.36	0.61
	9/1/2021	18,528,778	5.02	1.0	0.00	0	0	4,208,262	0.95	130	0.03	0	0	3,236,498	0.92	1,800	0.78	3,200	1.38	25,973,538	0.80	1.38
th Quarter	10/1/2021	18,745,511	5.19	290	0.524	59	0	4,249,341	0.98	380	0.13	9.8	0	3,276,186	0.01	4,700	1.55	17,000	5.62	26,271,038	2.21	5.73
2021	11/1/2021	18,977,098	4.65	290	0.560	59	0	4,293,182	0.88	380	0.14	9.8	0	3,276,618	0.82	4,700	0.02	17,000	0.06	26,546,898	0.72	0.18
	12/1/2021	19,177,847	4.92	290	0.485	59	0	4,331,232	0.93	380	0.12	10	0	3,311,987	0.41	4,700	1.39	17,000	5.01	26,821,066	1.99	5.11
	2015:		5.36		1.98		0.09	833,039	1.57		11.99		0.65	169,450	0.32		108		268	3,825,623	122	268
	2016:		5.97		1.07		0.01	868,904	1.65		12.89		0.29	213,296	0.41		51 110		100	4,226,117	65	100
	2017:		5.87		0.43		0.00	795,642	1.51		8.24		0.04	512,508 210,564	0.98		110 47		249	4,389,274	118 50	249
	2018: 2019:		4.00 5.31		0.18 0.03		0.00 0.00	284,062 664 131	0.54 1.27		2.60 5.11		0.09 0.00	319,564 514,717	0.61 0.98		47 78.47		84 137.48	2,700,227	50 84	84 137
	2019.	3,021,310	5.31 5.73		0.03		0.00	664,131 488,276	0.93		1.73		0.00	1,102,807	2.09		62.64		83.64	3,964,518 4,612,393	64	84
	2020: 2021 ⁴ :		5.73 4.64		2.14		1.05	438,780	0.93		2.46		0.00	497,842	0.95		43.61		63.04 45.74	3,382,441	48	64 47
(Cumulative Total 4:		442.54		5.94		1.15	4,372,834	99.66		45.01		1.64	3,330,184	76.04		500.89		967.73	27,100,593	552	971
		19,091,044	772.04		0.54		1.10	7,572,054	33.00		70.01		1.04	3,330,104	70.04		300.09		301.13	21,100,093	002	3/1

Appendix F GW Stabilization System Details

Appendix F

Groundwater Stabilization System Details 2021 Annual Groundwater Performance Monitoring Report 1300 Revolution Street Havre de Grace, Maryland



Notes:

- ¹ Totalizer readings are collected at 8:00AM.
- ² Analytical data were collected quarterly at each extraction well beginning in second quarter 2015.
- 1,2-DCA and MC results presented for first quarter 2015 were collected on December 30, 2014.

Data collected within the month corresponding to its row are bolded. Results are extrapolated for the entire quarter.

Nondetects are presented as zeroes.

- ³ Analytical data were collected semiannually in 2018.
- ⁴ December pumping data was estimated based on average of October and November 2021 daily pumping rates, and extrapolated for December.

Acronyms and Abbreviations:

μg/L = microgram per liter

-- = not applicable

1,2-DCA = 1,2-dichloroethane

bgs = below ground surface

gpm = gallon per minute

lb = pound

MC = methylene chloride

NS = Not Sampled

Appendix F GW Stabilization System Details

Appendix G

Historical Analytical Data



	ı	Location ID:	MW-1A	MW-1A	MW-1A	MW-1A	MW-1A	MW-1A	MW-1A	MW-2	MW-2	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-3
	S	ample Date:	07/16/92	11/01/94	10/23/97	02/26/98	07/22/98	12/16/98	04/14/99	07/16/92	11/01/94	02/25/98	12/16/98	04/14/99	07/16/92	11/01/94	10/23/97	02/26/98
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	NA	20 U	10 U	10 U	2.0 U	2.0 U	0.35 U	NA	10 U	10 U	2.0 U	0.35 U	NA	2,000 U	150,000	7.0 J
1,2-Dichloroethane	5	ug/L	560	250	190 D	99	86	56	110	420	10 U	18	31	20	36,000	36,000	44,000,000 D	870 D
Chloroethane		ug/L	NA	20 U	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA	2,000 U	NA	NA
Chloroform	0.19	ug/L	NA	20 U	10 U	10 U	2.0 U	2.0 U	0.59 U	NA	10 U	10 U	2.0 U	0.59 U	NA	260 J	38,000	2.0 J
Methylene Chloride	5	ug/L	12 B	10 JB	10,000 U	10 U	5.0 U	5.0 U	1.1 U	1,800 B	10 U	10 U	5.0 U	1.1 U	2,000 B	2,000 U	15,000	9.0 J
Tetrachloroethene	5	ug/L	NA	20 U	10,000 U	10 U	2.0 U	2.0 U	0.62 U	NA	10 U	10 U	2.0 U	0.62 U	NA	2,000 U	6,000 J	10 U
Trichloroethene	5	ug/L	NA	20 U	10,000 U	10 U	2.0 U	2.0 U	0.44 U	NA	10 U	10 U	2.0 U	0.44 U	NA	380 J	5,000,000 U	220 D
cis-1,2-Dichloroethene		ug/L	NA	NA														
Vinyl Chloride	2	ug/L	0.13 U	20 U	10,000 U	10 U	2.0 U	2.0 U	0.71 U	4.8	10 U	10 U	2.0 U	0.71 U	15	2,000 U	200,000	12
Carbon Disulfide	1000	ug/L	NA	20 U	10 U	10 U	2.0 U	2.0 U	0.56 U	NA	4.0 J	10 U	2.0 U	0.56 U	NA	2,000 U	10,000 U	10 U

	ı	ocation ID:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
	S	ample Date:	09/16/02	12/18/02	03/05/03	10/09/03	03/18/04	10/11/04	03/22/05	09/22/05	03/16/06	03/17/06	06/22/06	05/03/11	11/20/14	06/04/15	11/16/15	10/04/16
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	56 U	28 U	28 U	39	26	2.3	13	21	8.4	8.4	4.7	75 U	1.3 J	10 U [13 U]	0.76 J [0.66 J]	0.65 J [0.66 J]
1,2-Dichloroethane	5	ug/L	15,000	16,000	13.2	8,500	5,000	650	2,900	3,700	1,600	2,100	990	1,300	660	270 [270]	360 [350]	250 [250]
Chloroethane		ug/L	NA	48 U	48 U	23 U	NA	1.8 U	9.2 U	4.8 U	NA	NA	1.2 U	75 U	2.0 U	10 U [13 U]	5.0 U [5.0 U]	NA
Chloroform	0.19	ug/L	50 U	25 U	25 U	16	9.5 U	1.7 U	8.5 U	10 U	13 U	10 U	2.6 U	75 U	0.40 J	10 U [13 U]	5.0 U [5.0 U]	1.0 U [1.0 U]
Methylene Chloride	5	ug/L	180 U	88 U	88 U	40 U	40 U	4.6 U	23 U	10 U	13 U	10 U	2.6 U	75 U	2.0 U	10 U [13 U]	2.8 J [2.7 J]	5.0 U [5.0 U]
Tetrachloroethene	5	ug/L	48 U	24 U	24 U	16 U	16 U	1.8 U	9.0 U	9.0 U	11 U	9.0 U	2.2 U	75 U	2.0 U	10 U [13 U]	5.0 U [5.0 U]	1.0 U [1.0 U]
Trichloroethene	5	ug/L	460	500	370	250	150	14	66	83	36	39	18	71 J	61	43 [41]	43 [41]	51 [50]
cis-1,2-Dichloroethene		ug/L	NA	64	33	41	NA	1.8 U	11	16	NA	NA	4.7	75 U	18	14 [15]	17 [16]	NA
Vinyl Chloride	2	ug/L	58 U	29 U	29 U	26 U	26 U	1.8 U	8.8 U	5.6 U	7.0 U	5.6 U	1.4 U	75 U	16	21 [24]	31 [30]	24 [24]
Carbon Disulfide	1000	ug/L	60 U	30 U	30 U	12 U	12 U	1.2 U	6.2 U	6.8 U	8.5 U	6.8 U	1.7 U	75 U	2.0 U	10 U [13 U]	5.0 U [5.0 U]	1.0 U [1.0 U]

		Location ID:	MW-3DL	MW-3-DL	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
	;	Sample Date:	03/16/98	03/16/98	07/16/92	11/01/94	10/23/97	02/26/98	07/22/98	12/16/98	04/14/99	11/14/01	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1,000 U	1,000 U	NA	200 U	10,000 U	10 U	2.0 U	2.0 U	1.8 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	28,000 D	28,000 D	5,000 U	25 J	63,000	110	27	56	85	25	8.4	2.6	32	0.90	1.9	0.70
Chloroethane		ug/L	NA	NA	NA	200 U	NA	0.50 U	0.50 U	NA	0.40 U							
Chloroform	0.19	ug/L	1,000 U	1,000 U	NA	25 J	10 U	10 U	2.0 U	2.0 U	3.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U
Methylene Chloride	5	ug/L	2,500 U	2,500 U	49,000 B	2,700	440 D	490 D	190	140 D	450	1.0 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U
Tetrachloroethene	5	ug/L	1,000 U	1,000 U	NA	200 U	10 U	10 U	2.0 U	2.0 U	3.1 U	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U
Trichloroethene	5	ug/L	490 JD	490 JD	NA	200 U	10 U	10 U	2.0 U	2.0 U	2.2 U	0.30 U	0.30 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U
cis-1,2-Dichloroethene		ug/L	NA	9.0	4.0	NA	2.4											
Vinyl Chloride	2	ug/L	1,000 U	1,000 U	1.7	200 U	10 U	10 U	2.0 U	2.0 U	3.6 U	2.8	2.1	0.30 U	0.30 U	1.5	1.8	2.3
Carbon Disulfide	1000	ug/L	1,000 U	1,000 U	NA	200 U	10 U	10 U	2.0 U	2.0 U	2.8 U	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U

	l	ocation ID:	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-5							
	Sa	ample Date:	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	10/08/20	09/14/21	07/16/92	11/01/94	10/22/97	02/24/98	07/22/98	12/14/98	04/14/99	03/16/06
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.0 U	5.0 U	1.0 U	NA	10 U	10 U	10 U	2.0 U	2.0 U	0.35 U	0.30 U				
1,2-Dichloroethane	5	ug/L	0.27 J	0.35 J	1.0 U	5.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.21 U	0.30 U					
Chloroethane		ug/L	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	10 U	NA	NA	NA	NA	NA	NA
Chloroform	0.19	ug/L	1.0 U	NA	10 U	10,000 U	10 U	2.0 U	2.0 U	0.59 U	0.50 U							
Methylene Chloride	5	ug/L	1.0 U	1.0 U	5.0 U	1.0 U	4.9 JB	10 U	10,000 U	10 U	5.0 U	5.0 U	3.5	0.50 U				
Tetrachloroethene	5	ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	NA	10 U	10,000 U	10 U	2.0 U	2.0 U	0.62 U	0.40 U
Trichloroethene	5	ug/L	1.0 U	NA	10 U	10,000 U	10 U	2.0 U	2.0 U	0.44 U	0.40 U							
cis-1,2-Dichloroethene		ug/L	0.94 J	1.1	NA	1.5	1.3	1.1	1.0 U	NA								
Vinyl Chloride	2	ug/L	0.76 J	0.83 J	0.91 J	1.0 U	1.0 U	1	1.0 U	1.0 U	0.13 U	10 U	10 U	10 U	2.0 U	2.0 U	0.71 U	0.30 U
Carbon Disulfide	1000	ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	NA	NA	10 U	10 U	10 U	2.0 U	2.0 U	4.6	0.30 U



	ı	Location ID:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-6								
	s	ample Date:	03/16/98	07/22/98	12/16/98	04/14/99	11/15/01	12/19/01	05/28/02	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	03/22/05	09/22/05	03/17/06
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	86	400 U	100 U	35 U	40 U	20 U	90	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	2,800 E	24,000	16,000 D	20,000 D	22,000	19,000	22,000	0.20 U	12	0.40 U	0.50	4.3	0.40 U	0.40 U	0.30 U	0.40
Chloroethane		ug/L	NA	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA								
Chloroform	0.19	ug/L	21	400 U	100 U	59 U	38 U	19 U	50 U	0.50	0.50	0.30	0.50	0.40	0.50	0.30 U	0.50 U	0.50 U
Methylene Chloride	5	ug/L	43	1,600	250 U	110 U	200 U	100 U	180 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U
Tetrachloroethene	5	ug/L	6.0	400 U	100 U	62 U	56 U	28 U	48 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U
Trichloroethene	5	ug/L	440 E	450 U	240	410	770	720	780	0.30 U	2.0	0.10 U	0.20 U	1.1	0.40 U	0.40 U	0.40 U	0.40 U
cis-1,2-Dichloroethene		ug/L	NA	0.30 U	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA								
Vinyl Chloride	2	ug/L	140	400 U	260	71 U	46 U	23 U	58 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U
Carbon Disulfide	1000	ug/L	2.0 U	400 U	100 U	56 U	50 U	25 U	60 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U

	ı	Location ID:	MW-3	MW-3	MW-3	MW-3	MW-3 ³	MW-3D	MW-3D-DL	MW-6D	MW-6D	MW-6D	MW-6I	MW-6I	MW-6I	MW-6I	MW-6I	MW-6I
	S	ample Date:	10/04/17	11/20/18	09/20/19	10/08/20	09/14/21	05/28/96	05/28/96	12/07/06	01/03/08	05/03/11	12/07/06	05/03/11	11/20/14	06/04/15	11/16/15	01/03/08
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U [10 U]	25 U [40 U]	1.0 U [13 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	110	2,500 U	0.50	0.20 U	50 U	22 U	100 U	1.5 J	130 U	1.9 J	5.5 U
1,2-Dichloroethane	5	ug/L	360 D [350]	370 [350]	150 DJ [180 J]	49 [46]	41 J [38]	15,000 E	43,000 D	170	20	700	9,000	2,900	1,700	2,200	1,200	3,900
Chloroethane		ug/L	1.0 U [10 U]	25 U [40 U]	1.0 U [13 U]	1.0 U [1.0 U]	10 U [2.0 U]	81	5,000 U	0.40 U	0.40 U	50 U	43 U	100 U	5.0 U	130 U	10 U	11 U
Chloroform	0.19	ug/L	1.0 U [10 U]	25 U [40 U]	1.0 U [13 U]	1.0 U [1.0 U]	10 UJ [2.0 U]	35	2,500 U	0.20 U	0.20 U	50 U	20 U	100 U	5.0 U	130 U	10 U	5.0 U
Methylene Chloride	5	ug/L	1.0 UB [10 UB]	25 U [40 U]	38 [44]	53 D [48 D]	35 J [45]	5.0 U	2,500 U	0.40 U	0.40 U	50 U	40 U	100 U	5.0 U	130 U	10 U	10 U
Tetrachloroethene	5	ug/L	NA	25 U [40 U]	NA	1.0 U [1.0 U]	NA	11	2,500 U	0.40 U	0.40 U	50 U	42 U	100 U	5.0 U	130 U	10 U	10 U
Trichloroethene	5	ug/L	54 DJ [56 J]	42 [42]	21 [27]	6.9 [6.8]	10 UJ [2.3]	510 E	2,500 U	6.2	1.2	15 J	36 U	20 J	13	24 J	13	27
cis-1,2-Dichloroethene		ug/L	15 [16]	25 U [40 U]	4.1 [13 U]	1.2 [1.3]	10 UJ [2.0 U]	NA	NA	0.90	0.40	50 U	28 U	100 U	6.7	130 U	6.4 J	15
Vinyl Chloride	2	ug/L	15 [12]	25 U [40 U]	110 D [98]	190 DJ [110 DJ]	59 J[81 DJ]	40	5,000 U	0.60	0.20 U	50 U	95	100 U	7.7	130 U	6.0 J	16
Carbon Disulfide	1000	ug/L	NA	25 U [40 U]	NA	NA	NA	5.0 U	2,500 U	0.40 U	0.40 U	50 U	44 U	100 U	5.0 U	130 U	10 U	11 U

		Location ID:	MW-6	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-7	MW-7	MW-7	MW-8D	MW-8D	MW-8D-DL	MW-8D	MW-8D	MW-8D
	S	ample Date:	11/01/94	03/22/05	09/22/05	03/17/06	06/22/06	05/03/11	11/20/14	07/20/98	12/15/98	04/14/99	11/01/94	05/28/96	05/28/96	10/20/97	02/24/98	07/23/98
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	10 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U [1.0 U]	2.0 U	2.0 U	0.35 U	20 U	5.0 U	250 U	10 U	10 U	2.0 U
1,2-Dichloroethane	5	ug/L	30	5.5	0.30 U	18	26	1.0 U	0.31 J [0.28 J]	2.0 U	2.0 U	0.21 U	270	2,800 E	2,800 D	350 D	11	120
Chloroethane		ug/L	10 U	0.40 U	0.20 U	NA	1.1	1.0 U	1.0 U [1.0 U]	NA	NA	NA	20 U	10 U	500 U	NA	NA	NA
Chloroform	0.19	ug/L	1.0 J	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U [1.0 U]	2.0 U	2.0 U	0.59 U	20 U	5.0 U	250 U	10 U	10 U	2.0 U
Methylene Chloride	5	ug/L	10 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U [1.0 U]	4.0 J	5.0 U	1.1 U	20 U	5.0 U	250 U	10 U	10 U	4.0 J
Tetrachloroethene	5	ug/L	10 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U [1.0 U]	2.0 U	2.0 U	0.62 U	20 U	NA	250 U	10 U	10 U	2.0 U
Trichloroethene	5	ug/L	3.0 J	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U [1.0 U]	2.0 U	2.0 U	0.44 U	20 U	5.0 U	250 U	10 U	4.0 J	2.0 U
cis-1,2-Dichloroethene		ug/L	NA	5.2	2.1	NA	6.4	0.35 J	0.80 J [0.84 J]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	ug/L	10 U	2.1	3.2	1.7	1.5	1.0 U	0.61 J [0.72 J]	2.0 U	2.0 U	0.71 U	20 U	10 U	500 U	10 U	10 U	2.0 U
Carbon Disulfide	1000	ug/L	10 U	0.20 U	0.80	0.30 U	1.0	1.0 U	1.0 U [1.0 U]	2.0 U	2.0 U	0.56 U	20 U	5.0 U	250 U	10 U	10 U	2.0 U

	1	Location ID:	MW-5D	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-8D								
	s	ample Date:	12/07/06	10/24/97	02/24/98	07/22/98	12/14/98	04/14/99	11/14/01	03/03/03	10/09/03	03/18/04	10/11/04	03/22/05	09/23/05	03/17/06	06/22/06	05/02/11
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.20 U	10 U	10 U	2.0 U	2.0 U	2.5	1.2	0.30 U	1.0 U							
1,2-Dichloroethane	5	ug/L	0.30 U	62	28	99	100	130	33	0.40 U	3.7	0.30 U	1.0	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U
Chloroethane		ug/L	0.40 U	NA	NA	NA	NA	NA	NA	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	1.0 U
Chloroform	0.19	ug/L	0.20 U	10 U	10 U	2.0 U	2.0 U	0.59 U	0.60	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U
Methylene Chloride	5	ug/L	0.40 U	10 U	10 U	5.0 U	5.0 U	1.1 U	1.0 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U
Tetrachloroethene	5	ug/L	0.40 U	10 U	10 U	2.0 U	2.0 U	0.62 U	0.60	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U
Trichloroethene	5	ug/L	0.40 U	7.0 J	5.0 J	11	17	13	8.7	0.10 U	0.20	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U
cis-1,2-Dichloroethene		ug/L	1.4	NA	NA	NA	NA	NA	NA	0.30 U	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.0 U
Vinyl Chloride	2	ug/L	0.20 U	10 U	5.0 J	2.0 U	3.0	4.6	0.20 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U
Carbon Disulfide	1000	ug/L	0.40 U	10 U	10 U	2.0 U	2.0 U	0.56 U	0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	1.0 U



		Location ID:	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-8S						
	S	ample Date:	06/22/06	05/03/11	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	11/01/94	10/20/97	02/24/98	07/23/98	12/14/98	04/14/99	11/14/01
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	5.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U	2.0 U	2.0 U	0.35 U	0.20 U
1,2-Dichloroethane	5	ug/L	0.30 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 UJ [1.0 UJ]	10 U	10 U	10 U	2.0 U	2.0 U	0.21 U	0.20 U
Chloroethane		ug/L	0.20 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	NA	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	NA	NA	NA	NA	NA	NA
Chloroform	0.19	ug/L	0.50 U	1.0 U	1.0 U [0.13 J]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U	2.0 U	2.0 U	0.59 U	0.20 U
Methylene Chloride	5	ug/L	0.50 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	5.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U	4.0 J	5.0 U	1.1 U	1.0 U
Tetrachloroethene	5	ug/L	0.40 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	NA	1.0 U [1.0 U]	NA	10 U	10 U	10 U	2.0 U	2.0 U	0.62 U	0.30 U
Trichloroethene	5	ug/L	0.40 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U	2.0 U	2.0 U	0.44 U	0.30 U
cis-1,2-Dichloroethene		ug/L	0.40 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	NA	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	NA	NA	NA	NA	2.0 U	NA	NA
Vinyl Chloride	2	ug/L	0.30 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U	2.0 U	2.0 U	0.71 U	0.20 U
Carbon Disulfide	1000	ug/L	0.30 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	NA	1.0 U [1.0 U]	NA	10 U	10 U	10 U	2.0 U	2.0 U	0.56 U	0.20 U

		Location ID:	MW6I	MW-6I	MW-6I	MW-6I	MW-6I	MW-6I	MW-7	MW-7	MW-7	MW-8S	MW-8S	MW-8S	MW-8S	MW-9D	MW-9D	MW-9D
	S	ample Date:	10/04/16	10/02/17	11/20/18	09/20/19	10/08/20	09/14/21	11/01/94	10/21/97	02/23/98	11/20/18	09/20/19	10/08/20	9/14/2021	11/01/94	10/21/97	02/23/98
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	100 U [100 U]	2.7 [50 U]	100 U	100 U	10 U	2.0 U	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U
1,2-Dichloroethane	5	ug/L	2,600 [2,400]	2,700 D [2,700	2,400	2500	2,100 D	52	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	13	12	3.0 J
Chloroethane		ug/L	NA	1.0 U [50 U]	100 U	100 U	100 U	NA	10 U	NA	NA	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	NA	NA
Chloroform	0.19	ug/L	20 U [20 U]	1.0 U [50 U]	100 U	100 U	10 U	2.0 U	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U
Methylene Chloride	5	ug/L	100 U [100 U]	1.0 U [50 UB]	100 U	100 U	10 U	2.0 U	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	4.0 J
Tetrachloroethene	5	ug/L	20 U [20 U]	NA	100 U	NA	10 U	NA	10 U	10 U	10 U	1.0 U	NA	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U
Trichloroethene	5	ug/L	27 [23]	27 [50 U]	100 U	100 U	20	3.5	1.0 J	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U
cis-1,2-Dichloroethene		ug/L	NA	14 [50 U]	100 U	100 U	12	NA	NA	NA	NA	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	NA	NA	NA
Vinyl Chloride	2	ug/L	20 U [14 J]	15 [50 U]	100 U	100 U	10 U	2.0 U	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U [1.0 U]	10 U	10 U	10 U
Carbon Disulfide	1000	ug/L	20 U [20 U]	NA	100 U	NA	NA	NA	30	10 U	10 U	1.0 U	NA	NA	NA	10 U	10 U	10 U

	I	Location ID:	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-10D						
	S	ample Date:	12/14/98	04/14/99	11/14/01	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	07/21/98	12/16/98	04/12/99	07/13/99	10/12/04	09/23/05	03/15/06
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	2.0 U	0.35 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	270 E	100 U	70 U	80	28 U	8.2 U	1.6 U
1,2-Dichloroethane	5	ug/L	5.0	130	110	7.8	16	0.40 U	3.7	0.30 U	1.0	16,000 E	5,400	21,000	25,000 D	7,700	3,700	380
Chloroethane		ug/L	NA	NA	NA	NA	NA	0.50 U	0.50 U	NA	0.40 U	NA	NA	NA	94	37 U	6.0 U	NA
Chloroform	0.19	ug/L	2.0 U	0.59 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	17	100 U	120 U	8.9	34 U	13 U	2.6 U
Methylene Chloride	5	ug/L	5.0 U	1.1 U	1.0 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	47	250 U	230 U	5.8 B	91 U	13 U	2.6 U
Tetrachloroethene	5	ug/L	2.0 U	0.62 U	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	2.0 U	100 U	120 U	2.8	36 U	11 U	2.2 U
Trichloroethene	5	ug/L	2.0 U	0.44 U	0.30 U	0.30 U	0.10 U	0.10 U	0.20	0.20 U	0.40 U	23	100 U	88 U	56	40 U	26	1.8 U
cis-1,2-Dichloroethene		ug/L	NA	NA	NA	NA	NA	0.30 U	0.20 U	NA	0.40 U	NA	NA	NA	NA	35 U	20	NA
Vinyl Chloride	2	ug/L	2.0 U	0.71 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	53	100 U	140 U	63	48	76	4.1
Carbon Disulfide	1000	ug/L	2.0 U	0.56 U	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	2.0 U	100 U	110 U	NA	25 U	NA	1.7 U

	I	ocation ID:	MW-8D	MW-8D	MW-8D	MW8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-8D	MW-10S	MW-10S	MW-10S	MW-10S	MW-11D	MW-11D	MW-11D
	S	ample Date:	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	10/08/20	09/14/21	07/21/98	04/14/99	05/02/11	11/20/18	02/28/95	05/28/96	10/22/97
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	2.0 U	0.35 U	1.0 U	1.0 U	10 U	5.0 U	10 U				
1,2-Dichloroethane	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.70 J	1.0 U	1.0 U	1.0 U	1.0 UJ	2.0 U	0.21 U	1.0 U	1.0 U	10 U	5.0 U	44
Chloroethane		ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	10 U	10 U	NA
Chloroform	0.19	ug/L	1.0 U	1.0 UJ	2.0 U	0.59 U	1.0 U	1.0 U	10 U	5.0 U	10 U							
Methylene Chloride	5	ug/L	1.0 U	1.0 U	1.0 U	5.0 U	1.0 UJ	5.0	1.1 U	1.0 U	1.0 U	10 U	5.0 U	10 U				
Tetrachloroethene	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	2.0 U	0.62 U	1.0 U	1.0 U	10 U	5.0 U	10 U
Trichloroethene	5	ug/L	1.0 U	1.0 UJ	2.0 U	0.44 U	1.0 U	1.0 U	10 U	5.0 U	10 U							
cis-1,2-Dichloroethene		ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	1.0 U	1.0 U	NA	NA	NA
Vinyl Chloride	2	ug/L	1.0 U	2.0 U	0.71 U	1.0 U	1.0 U	10 U	10 U	10 U								
Carbon Disulfide	1000	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	NA	2.0 U	0.56 U	1.0 U	1.0 U	10 U	5.0 U	10 U



	ı	Location ID:	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S	MW-8S
	S	ample Date:	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	03/22/05	09/23/05	03/17/06	06/22/06	05/02/11	11/20/14	10/04/16	10/03/17	06/04/15	11/16/15
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	0.20 U	0.40 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane		ug/L	NA	NA	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U
Chloroform	0.19	ug/L	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Methylene Chloride	5	ug/L	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U
Trichloroethene	5	ug/L	0.30 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	NA	NA	0.30 U	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	ug/L	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.3	NA	1.0 U	1.0 U

	I	Location ID:	MW-9D	MW-9D	MW-9D	MW-9D	MW-9S	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D						
	S	ample Date:	07/21/98	12/16/98	04/14/99	05/03/11	11/01/94	10/21/97	02/23/98	07/20/98	12/16/98	04/14/99	11/20/18	02/28/95	05/28/96	10/23/97	02/25/98	03/16/98
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	2.0 U	2.0 U	0.35 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.35 U	1.0 U	10 U	53	2,000 U	10 U	8.0
1,2-Dichloroethane	5	ug/L	12	4.0	14	1.5	10 U	7.0 J	10 U	2.0 U	2.0 U	0.21 U	1.0 U	24,000	5,800 E	22,000	170	1,100 E
Chloroethane		ug/L	NA	NA	NA	1.0 U	10 U	NA	NA	NA	NA	NA	1.0 U	10 U	240 E	NA	NA	NA
Chloroform	0.19	ug/L	2.0 U	2.0 U	0.59 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.59 U	1.0 U	10 U	5.0 U	2,000 U	10 U	2.0 U
Methylene Chloride	5	ug/L	5.0 U	5.0 U	1.1 U	1.0 U	10 U	10 U	10 U	5.0 U	5.0 U	1.1 U	1.0 U	10 U	16	2,000 U	10 U	5.0 U
Tetrachloroethene	5	ug/L	2.0 U	2.0 U	0.62 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.62 U	1.0 U	10 U	5.0 U	2,000 U	10 U	2.0 U
Trichloroethene	5	ug/L	2.0 U	2.0 U	0.44 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.44 U	1.0 U	10 U	130	2,000 U	10 U	2.0 U
cis-1,2-Dichloroethene		ug/L	NA	NA	NA	1.0 U	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA	NA
Vinyl Chloride	2	ug/L	2.0 U	2.0 U	0.71 U	1.0	10 U	10 U	10 U	2.0 U	2.0 U	0.71 U	1.0 U	10 U	35	2,000 U	10 U	6.0
Carbon Disulfide	1000	ug/L	2.0 U	2.0 U	0.56 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.56 U	1.0 U	10 U	5.0 U	2,000 U	10 U	2.0 U

		Location ID:	MW-10D	MW-10D	MW10D	MW-10D-A	MW-10D-B	MW-10D-C	MW-10D-D	MW-10DDL	MW-10DDL	MW-10D-E	MW-10D-F	MW-10D-G	MW-10DL	MW-10S	MW-10S	MW-10S
	S	ample Date:	05/02/11	05/15/15	10/04/16	11/01/99	11/02/99	11/02/99	11/03/99	03/16/98	07/21/98	11/03/99	11/04/99	11/04/99	05/28/96	02/28/95	10/23/97	02/25/98
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	10 U	5.0 U	55	38	35 U	35 U	100 U	1,000 U	35 U	35,000 U	35 U	2,500 U	10 U	10 U	10 U
1,2-Dichloroethane	5	ug/L	2.1	160	62	16,000	13,000	15,000	17,000	1,800 D	35,000 D	18,000	19,000	17,000	44,000 D	120	10 U	10 U
Chloroethane		ug/L	1.0 U	10 U	1.0 U	41 U	41 U	41 U	41 U	NA	NA	41 U	41 U	41 U	5,000 U	10 U	NA	NA
Chloroform	0.19	ug/L	1.0 U	10 U	1.0 U	37 U	37 U	37 U	37 U	100 U	1,000 U	37 U	37 U	37 U	2,500 U	3.0 J	10 U	10 U
Methylene Chloride	5	ug/L	1.0 U	14	5.0 U	99 U	170	430	410	250 U	2,500 U	730,000	610	750	2,500 U	4.0 JB	10 U	10 U
Tetrachloroethene	5	ug/L	1.0 U	10 U	1.0 U	14 U	14 U	14 U	14 U	100 U	1,000 U	14,000 U	14,000 U	14,000 U	2,500 U	10 U	10 U	10 U
Trichloroethene	5	ug/L	0.58 J	4.3 J	4.6	58	43	47	46	100 U	1,000 U	62	49	49	2,500 U	10 U	10 U	10 U
cis-1,2-Dichloroethene		ug/L	1.1	NA	8.2	37 U	37 U	37 U	NR	NA	NA	50	NA	NA	NA	NA	NA	NA
/inyl Chloride	2	ug/L	7.4	13	20	45 U	260	220	160	100 U	1,000 U	280	45 U	45 U	5,000 U	10 U	10,000 U	10 U
Carbon Disulfide	1000	ug/L	1.0 U	NA	1.0 U	NA	NA	NA	NA	100 U	1,000 U	NA	NA	NA	2,500 U	10 U	10 U	10 U

	I	Location ID:	MW-11D	MW-11D	MW-11D	MW-11D	MW-11D	MW-11S	MW-11S	MW-11S	MW-11S	MW-11S	MW-11S	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D
	S	ample Date:	02/23/98	07/20/98	12/15/98	04/13/99	05/03/11	02/28/95	10/21/97	02/23/98	07/20/98	12/15/98	04/13/99	10/23/97	02/25/98	07/21/98	12/15/98	04/13/99
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	10 U	2.0 U	2.0 U	0.35 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.35 U	200 U	100 U	32	100 U	18 U
1,2-Dichloroethane	5	ug/L	3.0 J	2.0 U	2.0 U	0.21 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.21 U	1,900	7,200 E	7,100 E	8,400	6,200
Chloroethane		ug/L	NA	NA	NA	NA	1.0 U	10 U	NA									
Chloroform	0.19	ug/L	10 U	2.0 U	2.0 U	0.59 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.59 U	200 U	100 U	2.0 U	100 U	30 U
Methylene Chloride	5	ug/L	10 U	4.0 J	5.0 U	1.1 U	1.0 U	10 U	10 U	10 U	5.0 U	5.0 U	1.1 U	200 U	45 J	5.0 U	380	56 U
Tetrachloroethene	5	ug/L	10 U	2.0 U	2.0 U	0.62 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.62 U	200 U	100 U	2.0 U	100 U	31,000 U
Trichloroethene	5	ug/L	10 U	2.0 U	2.0 U	0.44 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.44 U	200 U	60 J	39	100 U	22,000 U
cis-1,2-Dichloroethene		ug/L	NA	NA	NA	NA	1.0 U	NA										
Vinyl Chloride	2	ug/L	10 U	2.0 U	2.0 U	0.71 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.71 U	200 U	96 J	47	100 U	36 U
Carbon Disulfide	1000	ug/L	10 U	2.0 U	2.0 U	0.56 U	1.0 U	10 U	10 U	10 U	2.0 U	2.0 U	0.56 U	200 U	100 U	2.0 U	100 U	28 U



	ı	Location ID:	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D	MW-12D
	S	ample Date:	11/13/01	12/19/01	10/07/02	10/09/03	03/18/04	10/11/04	03/22/05	09/22/05	03/16/06	06/22/06	05/02/11	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	0.20 U	0.20 U	0.40 U	3.8	0.30 U	19	0.40	0.30 U	0.30 U	0.70	1.0 U	1.0 U	0.30 J	3.7	2.4	1.0 U
Chloroethane		ug/L	NA	NA	NA	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
Chloroform	0.19	ug/L	0.20 U	0.40	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	0.16 J	0.21 J	0.33 J	1.0 U	0.72 J				
Methylene Chloride	5	ug/L	1.0 U	1.0 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
Tetrachloroethene	5	ug/L	0.30 U	0.30 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
Trichloroethene	5	ug/L	0.40	0.30 U	0.40	0.20	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	0.13 J	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	NA	NA	NA	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
Vinyl Chloride	2	ug/L	0.20 U	0.20 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	0.20 U	0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	NA

	I	Location ID:	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S
	S	ample Date:	02/25/98	07/21/98	12/15/98	04/13/99	11/13/01	12/19/01	10/07/02	10/09/03	03/18/04	10/11/04	03/22/05	09/22/05	03/16/06	06/22/06	05/02/11	11/20/14
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	10 U	2.0 U	2.0 U	0.35 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	10 U	2.0 U	2.0 U	0.21 U	0.20 U	0.20 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U
Chloroethane		ug/L	NA	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	1.0 U	1.0 U						
Chloroform	0.19	ug/L	10 U	2.0 U	2.0 U	0.59 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	0.15 J
Methylene Chloride	5	ug/L	10 U	5.0 U	5.0 U	1.1 U	1.0 U	1.0 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	10 U	2.0 U	2.0 U	0.62 U	0.30 U	0.30 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U
Trichloroethene	5	ug/L	10 U	2.0 U	2.0 U	0.44 U	0.30 U	0.30 U	0.10 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	NA	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.0 U	1.0 U						
Vinyl Chloride	2	ug/L	10 U	2.0 U	2.0 U	0.71 U	0.20 U	0.20 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	10 U	2.0 U	2.0 U	0.56 U	0.20 U	0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U

		Location ID:	MW-12S	MW-13D														
	S	ample Date:	09/14/21	10/24/97	02/25/98	07/21/98	12/15/98	04/13/99	11/13/01	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	03/22/05	03/16/06	06/08/06
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	190	64 J	110	100 U	120	35	27	7.0	13	82	25	34	18	0.30 U	12
1,2-Dichloroethane	5	ug/L	1.0 U	9,800 D	3,900 E	3,200 E	8,400	12,000 D	2,000	2,000	760	960	4,300	1,500	2,000	1,000	0.30 U	640
Chloroethane		ug/L	1.0 U	NA	4.8 U	12 U	NA	7.4 U	3.7 U	NA	1.2 U							
Chloroform	0.19	ug/L	1.0 U	26	100 U	15	100 U	30 U	3.8 U	3.8 U	2.5 U	2.7	16	3.9	6.8 U	3.4 U	0.50 U	2.6 U
Methylene Chloride	5	ug/L	1.0 U	130	100 U	22	370	56 U	20 U	20 U	8.8 U	8.8 U	20 U	8.1 U	18 U	9.1 U	0.50 U	2.6 U
Tetrachloroethene	5	ug/L	NA	8.0 J	100 U	5.0	100 U	31 U	5.6 U	5.6 U	2.4 U	2.5	7.8 U	3.2	7.2 U	3.6 U	0.40 U	3.3
Trichloroethene	5	ug/L	1.0 U	500 U	120	84	100 U	110	36	83	38	36	74	34	19	26	0.40 U	32
cis-1,2-Dichloroethene		ug/L	1.0 U	NA	7.6	24	NA	7.1	4.6	NA	5.9							
Vinyl Chloride	2	ug/L	1.0 U	26	100 U	6.0	100 U	36 U	4.6 U	4.6 U	2.9 U	2.9 U	13 U	5.3 U	7.0 U	3.5 U	0.30 U	1.4 U
Carbon Disulfide	1000	ug/L	NA	10 U	100 U	2.0 U	100 U	28 U	5.0 U	5.0 U	3.0 U	3.0 U	6.0 U	2.4 U	5.0 U	2.5 U	0.30 U	1.7 U

		Location ID:	MW-13D	MW-13D	MW-13D	MW-13D	MW-13DDL	MW-13D-DL	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S
	S	ample Date:	11/20/18	09/20/19	10/08/20	9/14/2021	07/21/98	02/25/98	10/24/97	02/25/98	07/21/98	12/15/98	04/13/99	11/13/01	12/19/01	10/07/02	03/03/03	10/09/03
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.8	1.0 U	1.9	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.35 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	1.0 U	46	3.2	16	5,100 D	2,600 D	8.0 J	10 U	2.0 U	2.0 U	0.21 U	0.20 U	0.20 U	0.40 U	0.40 U	0.30 U
Chloroethane		ug/L	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.50 U	0.50 U
Chloroform	0.19	ug/L	0.73 J	1.0 U	1.0 U	1.0 U	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.59 U	0.20 U	0.20 U	5.6	0.20 U	0.20 U
Methylene Chloride	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	250 U	500 U	10 U	10 U	5.0 U	7.0	1.1 U	1.0 U	1.0 U	0.90 U	0.90 U	0.80 U
Tetrachloroethene	5	ug/L	1.0 U	NA	1.0 U	NA	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.62 U	0.20 U	0.30 U	0.20 U	0.20 U	0.30 U
Trichloroethene	5	ug/L	1.0 U	7.9	1.0 U	2.8	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.44 U	0.20 U	0.30 U	0.10 U	0.10 U	0.20 U
cis-1,2-Dichloroethene		ug/L	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.30 U	0.20 U
Vinyl Chloride	2	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.71 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U
Carbon Disulfide	1000	ug/L	1.0 U	NA	NA	NA	100 U	500 U	10 U	10 U	2.0 U	2.0 U	0.56 U	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U



		Location ID:	MW-12D	MW-12D	MW-12D	MW-12D	MW-12DDL	MW-12D-DL	MW-12S	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
	S	ample Date:	11/20/18	09/20/19	10/08/20	9/14/2021	07/21/98	02/25/98	10/23/97	02/24/98	07/22/98	12/14/98	04/13/99	11/20/01	12/19/01	05/29/02	09/18/02	12/19/02
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	200 U	1,000 U	10 U	100,000 U	2.0 U	40 U	7.0 U	2.0 U	2.0 U	2.8 U	1.4 U	1.4 U
1,2-Dichloroethane	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	6,000 D	6,200 D	10 U	2,100,000 E	2,300 D	3,000	2,300	1,200	1,400	670	420	420
Chloroethane		ug/L	1.0 U	1.0 U	1.0 U	1.0 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4 U
Chloroform	0.19	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	200 U	1,000 U	10 U	100,000 U	2.0 U	40 U	12 U	1.9 U	1.9 U	2.5 U	1.2 U	1.2 U
Methylene Chloride	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	500 U	1,000 U	10 U	100,000 U	5.0 U	100 U	23 U	10 U	10 U	8.8 U	4.4 U	4.4 U
Tetrachloroethene	5	ug/L	1.0 U	NA	1.0 U	1.0 U	200 U	1,000 U	10,000 U	100,000 U	2.0 U	40 U	12 U	2.8 U	2.8 U	2.4 U	1.2 U	1.2 U
Trichloroethene	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	200 U	1,000 U	10 U	100,000 U	2.0 U	40 U	8.8 U	3.1 U	3.1 U	1.2 U	0.60 U	0.60 U
cis-1,2-Dichloroethene		ug/L	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.6 U
Vinyl Chloride	2	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	200 U	1,000 U	10 U	100,000 U	2.0 U	40 U	14 U	2.3 U	2.3 U	2.9 U	1.4 U	1.4 U
Carbon Disulfide	1000	ug/L	1.0 U	NA	NA	NA	200 U	1,000 U	10 U	100,000 U	2.0 U	40 U	11 U	2.5 U	2.5 U	3.0 U	1.5 U	1.5 U

	1	Location ID:	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-12S	MW-14	MW-14	MW-14	MW-14-DL	MW-14I	MW-14I	MW-14I	MW-14I	MW-14I
	s	ample Date:	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	10/08/20	09/20/19	10/08/20	09/14/21	02/24/98	01/03/08	01/03/08	05/02/11	11/20/14	06/04/15
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.0 U	5.0 U	1.0 U	500,000 U	0.20 U	0.40 U	2.0 U	1.0 U	1.0 U						
1,2-Dichloroethane	5	ug/L	0.22 J	1.0 U	12	1.0 U	1.0 U	2,000,000 D	170	220	42	23	19					
Chloroethane		ug/L	1.0 U	1.0 U	NA	1.0 U	NA	8.2	11	3.0	3.2	1.9						
Chloroform	0.19	ug/L	0.54 J	1.0 U	500,000 U	0.20 U	0.40 U	2.0 U	1.0 U	1.0 U								
Methylene Chloride	5	ug/L	1.0 U	1.0 U	5.0 U	1.0 U	500,000 U	0.40 U	0.80 U	0.50 JB	1.0 U	1.0 U						
Tetrachloroethene	5	ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	1.0 U	1.0 U	500,000 U	0.40 U	0.80 U	2.0 U	1.0 U	1.0 U
Trichloroethene	5	ug/L	1.0 U	500,000 U	0.40 U	0.70 U	2.0 U	1.0 U	1.0 U									
cis-1,2-Dichloroethene		ug/L	1.0 U	1.0 U	NA	1.0 U	NA	0.30 U	0.60 U	2.0 U	1.0 U	1.0 U						
Vinyl Chloride	2	ug/L	1.0 U	500,000 U	0.20 U	0.50 U	2.0 U	1.0 U	1.0 U									
Carbon Disulfide	1000	ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	NA	NA	NA	500,000 U	0.40 U	0.90 U	0.44 J	1.0 U	1.0 U

	1	Location ID:	MW-13D	MW-13D	MW-13D	MW-13D	MW-13D	MW-13D	MW-13D	MW-15								
	S	ample Date:	06/22/06	05/02/11	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17	06/22/06	01/03/08	05/02/11	11/21/14	06/04/15	11/16/15	10/05/16	10/03/17	11/20/18
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	8.6	3.5 J	0.94 J	1.0	0.98 J	5.0 U	1.0 U	0.30 U	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	420	270	130	7.5	86	4.9	26	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane		ug/L	1.2 U	12 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	0.20 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U
Chloroform	0.19	ug/L	2.6 U	12 U	0.24 J	0.35 J	0.33 J	1.0 U	1.0 U	0.50 U	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	3.4	12 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.50 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	2.5	12 U	0.98 J	1.0	0.95 J	1.0 U	NA	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
Trichloroethene	5	ug/L	27	14	6.6	7.0	7.2	1.8	3.2	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	5.2	12 U	0.56 J	0.58 J	1.0 U	NA	1.0 U	0.40 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U
Vinyl Chloride	2	ug/L	1.4 U	12 U	1.0 U	1.0 U	0.14 J	1.0 U	1.0 U	0.30 U	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	1.7 U	12 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	0.30 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U

	I	Location ID:	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-13S	MW-14	MW-16	MW-16	MW-16	MW-16	MW-17	MW-17	MW-17	MW-17	MW-17
	S	ample Date:	03/18/04	10/11/04	03/22/05	09/22/05	03/16/06	06/22/06	10/22/97	11/20/18	09/20/19	10/08/20	9/14/2021	10/22/97	02/24/98	07/22/98	12/14/98	04/13/99
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	250 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	10 U	2.0 U	2.0 U	0.35 U					
1,2-Dichloroethane	5	ug/L	0.30 U	0.60	0.40 U	0.30 U	0.30 U	0.30 U	4,000	1.3	13	0.63 J	1.0 UJ	10 U	10 U	2.0 U	2.0 U	0.21 U
Chloroethane		ug/L	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA
Chloroform	0.19	ug/L	0.40	0.60	0.30 U	1.8	0.50 U	0.50 U	250 U	1.0 U	1.0 U	1.0 U	1.0 UJ	10 U	10 U	2.0 U	2.0 U	0.59 U
Methylene Chloride	5	ug/L	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	250 U	1.0 U	1.0 U	1.0 U	1.0 UJ	10 U	10 U	5.0 U	5.0 U	1.1 U
Tetrachloroethene	5	ug/L	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	250 U	1.0 U	NA	1.0 U	NA	10 U	10 U	2.0 U	2.0 U	0.62 U
Trichloroethene	5	ug/L	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	250 U	3.7	9.8	2.6	1.0 UJ	10 U	10 U	2.0 U	2.0 U	0.44 U
cis-1,2-Dichloroethene		ug/L	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	NA	6.6	8.3	4.2	1.0 U	NA	NA	NA	NA	NA
Vinyl Chloride	2	ug/L	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	250 U	4.0	6.7	2.4	1.0 U	10 U	10 U	2.0 U	2.0 U	0.71 U
Carbon Disulfide	1000	ug/L	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	250 U	1.0 U	NA	NA	NA	10 U	10 U	2.0 U	2.0 U	0.56 U



	I	Location ID:	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
	s	ample Date:	03/05/03	10/09/03	03/18/04	10/11/04	03/23/05	09/23/05	03/29/06	06/08/06	06/22/06	01/03/08	05/02/11	11/20/14	06/04/15	11/16/15	10/05/16	10/03/17
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.4 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.20 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	420	200	190	170	140	110	93	120	100	83	43	24	21	18	15	13
Chloroethane		ug/L	2.4 U	7.0	NA	6.4	0.40 U	8.8	9.2	4.2	6.1	12	2.9	1.3	0.78 J	0.56 J	NA	1.0 U
Chloroform	0.19	ug/L	1.2 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	0.50 U	0.20 U	2.0 U	1.0 U				
Methylene Chloride	5	ug/L	4.4 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	0.50 U	0.40 U	0.81 JB	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
Tetrachloroethene	5	ug/L	1.2 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA
Trichloroethene	5	ug/L	0.60 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	2.0 U	1.0 U				
cis-1,2-Dichloroethene		ug/L	1.6 U	0.20 U	NA	0.40 U	0.30 U	2.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U					
Vinyl Chloride	2	ug/L	1.4 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	0.30 U	0.20 U	2.0 U	1.0 U				
Carbon Disulfide	1000	ug/L	1.5 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.40 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA

		Location ID:	MW-14I	MW-14I	MW-14I	MW-14I	MW-14I	MW-14I	MW-14I	MW-15								
	S	ample Date:	11/16/15	10/05/16	10/04/17	11/20/18	09/20/19	10/08/20	9/14/2021	10/21/97	02/24/98	07/23/98	12/15/98	04/13/99	03/18/04	10/12/04	03/22/05	09/22/05
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	5.0 U	1.0 U	10 U	10,000 U	2.0 U	2.0 U	0.35 U	0.30 U	0.30 U	0.30 U	0.30 U				
1,2-Dichloroethane	5	ug/L	18	11	8.7	4.7	4.6	3.7	4.4	10 U	10,000 U	2.0 U	2.0 U	0.21 U	0.30 U	0.40 U	0.40 U	0.30 U
Chloroethane		ug/L	2.4	NA	1.3	1.0 U	0.93 J	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	0.40 U	0.40 U	0.20 U
Chloroform	0.19	ug/L	1.0 U	10 U	10,000 U	2.0 U	2.0 U	0.59 U	0.20 U	0.30 U	0.30 U	0.50 U						
Methylene Chloride	5	ug/L	1.0 U	5.0 U	1.0 U	10 U	10,000 U	5.0 U	5.0 U	1.1 U	0.80 U	0.90 U	0.90 U	0.50 U				
Tetrachloroethene	5	ug/L	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U	NA	10 U	10 U	2.0 U	2.0 U	0.62 U	0.30 U	0.40 U	0.40 U	0.40 U
Trichloroethene	5	ug/L	1.0 U	10 U	10,000 U	2.0 U	2.0 U	0.44 U	0.20 U	0.40 U	0.40 U	0.40 U						
cis-1,2-Dichloroethene		ug/L	1.0 U	NA	1.0 U	NA	NA	NA	NA	NA	NA	0.40 U	0.40 U	0.40 U				
Vinyl Chloride	2	ug/L	1.0 U	10 U	10,000 U	2.0 U	2.0 U	0.71 U	0.50 U	0.40 U	0.40 U	0.30 U						
Carbon Disulfide	1000	ug/L	1.0 U	1.0 U	NA	1.0 U	NA	NA	NA	10 U	10,000 U	2.0 U	2.0 U	0.56 U	0.20 U	0.20 U	0.20 U	0.30 U

		Location ID:	MW-15	MW-15I	MW-15I	MW-15I	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
	S	ample Date:	09/20/19	01/03/08	01/03/08	05/02/11	10/21/97	02/24/98	07/23/98	12/15/98	04/13/99	06/08/06	12/15/06	05/02/11	11/21/14	06/04/15	11/16/15	10/05/16
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	0.20 U	0.20 U	1.0 U	10 U	250,000 U	2.0 U	200 U	35 U	3.3 U	0.20 U	20 U	2.3	1.0 U	1.0 U	0.97 J
1,2-Dichloroethane	5	ug/L	1.0 U	0.30 U	0.40	1.0 U	5,000 D	7,300 D	9,700 D	8,700	11,000	960	10	410	160	1.8	1.0	32
Chloroethane		ug/L	1.0 U	0.40 U	0.40 U	1.0 U	NA	NA	NA	NA	NA	2.4 U	0.40 U	20 U	0.89 J	1.0 U	1.0 U	NA
Chloroform	0.19	ug/L	1.0 U	0.20 U	0.30	1.0 U	8.0 J	250 U	7.0	200 U	59 U	5.2 U	0.20 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	1.0 U	0.40 U	0.40 U	1.0 U	10 U	81 J	4.0 J	500 U	410	5.1 U	0.40 U	20 U	1.0 U	1.0 U	1.0 U	5.0 U
Tetrachloroethene	5	ug/L	NA	0.40 U	0.40 U	1.0 U	10 U	250 U	7.0	200 U	62 U	4.5 U	0.80	20 U	0.38 J	0.33 J	0.28 J	1.0 U
Trichloroethene	5	ug/L	1.0 U	0.40 U	0.40 U	1.0 U	59	250 U	57	200 U	44 U	9.2 U	9.9	5.9 J	7.7	4.7	5.1	7.7
cis-1,2-Dichloroethene		ug/L	1.0 U	0.30 U	0.30 U	1.0 U	NA	NA	NA	NA	NA	9.1	7.8	20 U	5.3	5.2	5.7	NA
Vinyl Chloride	2	ug/L	1.0 U	0.20 U	0.20 U	1.0 U	240 JD	520	210	200 U	350	20	20	8.3 J	4.7	6.9	5.8	2.9
Carbon Disulfide	1000	ug/L	NA	0.40 U	0.40 U	1.0 U	10 U	250 U	2.0 U	200 U	56 U	3.4 U	0.40 U	20 U	1.0 U	1.0 U	1.0 U	1.0 U

	I	Location ID:	MW-17	MW-17	MW-17	MW-18												
	S	ample Date:	03/16/06	12/07/06	05/02/11	10/22/97	02/24/98	07/22/98	12/14/98	04/13/99	11/16/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	03/23/05	09/23/05
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	0.20 U	1.0 U	10 U	10 U	2.0 U	4.0 U	1.8 U	2.0 U	5.6 U	1.4 U	6.8 U	6.8 U	14 U	5.6 U	16 U
1,2-Dichloroethane	5	ug/L	0.30 U	0.30 U	1.0 U	10 U	370 D	350 D	490 D	740	960	1,800	420	2,100	2,500	3,600	3,500	3,400
Chloroethane		ug/L	NA	0.40 U	1.0 U	NA	220	620	NA	1,200	1,400	1,700						
Chloroform	0.19	ug/L	0.50 U	0.20 U	1.0 U	10 U	10 U	2.0 U	4.0 U	3.0 U	1.9 U	5.0 U	1.2 U	3.8 U	3.8 U	17 U	6.8 U	26 U
Methylene Chloride	5	ug/L	0.50 U	0.40 U	1.0 U	10 U	10 U	5.0 U	10 U	5.6 U	10 U	18 U	4.4 U	16 U	16 U	46 U	18 U	26 U
Tetrachloroethene	5	ug/L	0.40 U	0.40 U	1.0 U	10 U	10 U	2.0 U	4.0 U	3.1 U	2.8 U	4.8 U	1.2 U	6.2 U	6.2 U	18 U	7.2 U	22 U
Trichloroethene	5	ug/L	0.40 U	0.40 U	1.0 U	10 U	10 U	2.0 U	4.0 U	2.2 U	3.1 U	2.4 U	0.60 U	3.6 U	3.6 U	20 U	8.0 U	18 U
cis-1,2-Dichloroethene		ug/L	NA	0.30 U	1.0 U	NA	1.6 U	4.8 U	NA	18 U	7.0 U	22 U						
Vinyl Chloride	2	ug/L	0.30 U	0.20 U	1.0 U	10 U	10 U	2.0 U	4.0 U	3.6 U	2.3 U	5.8 U	1.4 U	11 U	11 U	18 U	7.0 U	14 U
Carbon Disulfide	1000	ug/L	0.30 U	0.40 U	1.0 U	10 U	10 U	2.0 U	4.0 U	2.8 U	2.5 U	6.0 U	1.5 U	4.8 U	4.8 U	12 U	5.0 U	17 U



		Location ID:	MW-14	MW-18 67)	MW-18 (14.67)	MW-18 (7.67)	MW-18 (14.67)	MW-18 (7.67)	MW-18 (14.67)	MW-18 (14.67)	MW-18 (7.67)						
	;	Sample Date:	11/20/18	06/08/06	06/22/06	01/03/08	01/03/08	05/02/11	05/02/11	11/20/14	11/20/14	06/04/15	06/04/15	11/16/15	11/16/15	10/04/16	10/04/16
Volatile Organics	CAO Goal ¹	Units															
1,1,2-Trichloroethane	5	ug/L	1.0 U	8.2 U	8.2 U	2.2 U	2.2 U	30 U	30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	5.0 U
1,2-Dichloroethane	5	ug/L	8.1	4,800	4,600	920	1,400	710	800	100	270	13	12	2.8	210	15	12
Chloroethane		ug/L	1.0 U	1,400	2,000	360	590	160	170	21	52	16	16	0.90 J	16	NA	NA
Chloroform	0.19	ug/L	1.0 U	13 U	13 U	2.0 U	2.0 U	30 U	30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	1.0 U	13 U	13 U	4.0 U	4.0 U	14 J	11 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	5.0 U
Tetrachloroethene	5	ug/L	1.0 U	11 U	11 U	4.2 U	4.2 U	30 U	30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U
Trichloroethene	5	ug/L	1.0 U	9.2 U	9.2 U	3.6 U	3.6 U	30 U	30 U	0.60 J	0.97 J	0.44 J	0.41 J	1.0 U	0.63 J	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	1.0 U	11 U	11 U	2.8 U	2.8 U	30 U	30 U	0.24 J	0.43 J	1.0 U	1.0 U	1.0 U	2.0 U	NA	NA
Vinyl Chloride	2	ug/L	1.0 U	14	13	3.8	7.4	30 U	30 U	0.20 J	0.55 J	1.0 U	1.0 U	1.0 U	0.63 J	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	1.0 U	8.5 U	8.5 U	4.4 U	4.4 U	30 U	30 U	1.0 U	1.0 U	0.94 J	0.65 J	1.0 U	2.0 U	1.0 U	1.0 U

		Location ID:	MW-15	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1
	(Sample Date:	03/16/06	10/07/02	03/03/03	10/09/03	03/18/04	10/12/04	03/23/05	09/23/05	03/16/06	06/22/06	05/02/11	11/21/14	06/04/15	11/16/15	10/05/16
Volatile Organics	CAO Goal ¹	Units															
1,1,2-Trichloroethane	5	ug/L	0.30 U	0.60 U	1.4 U	0.30 U	0.40	0.50	0.30 U	0.30 U	0.30 U	0.30 U	4.0 U	1.0 U	1.0 U	1.0 U	5.0 U
1,2-Dichloroethane	5	ug/L	0.30 U	230	280	120	170	190	200	120	98	84	62	3.0	1.6	1.9	7.8
Chloroethane		ug/L	NA	NA	2.4 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	4.0 U	1.0 U	1.0 U	1.0 U	NA
Chloroform	0.19	ug/L	0.50 U	0.50 U	1.2 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	0.50 U	1.8 U	4.4 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	2.5 JB	1.0 U	1.0 U	1.0 U	5.0 U
Tetrachloroethene	5	ug/L	0.40 U	0.50 U	1.2 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	ug/L	0.40 U	0.80	0.60 U	0.60	0.90	0.80	0.90	1.0	0.80	0.70	4.0 U	0.39 J	0.35 J	0.46 J	1.0 U
cis-1,2-Dichloroethene		ug/L	NA	NA	1.6 U	0.40	NA	0.40	0.50	0.40 U	NA	0.40 U	4.0 U	1.0 U	1.0 U	1.0 U	NA
Vinyl Chloride	2	ug/L	0.30 U	0.60 U	1.4 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	0.30 U	0.60 U	1.5 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U

		Location ID:	MW-16	MW-19D2	MW-19D2	MW-19D2	MW-19D2	MW-20D	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1
	5	Sample Date:	10/03/17	03/23/05	09/23/05	03/16/06	06/22/06	08/07/00	11/19/01	12/19/01	05/28/02	09/17/02	12/18/02	03/04/03	10/09/03	03/18/04	10/12/04
Volatile Organics	CAO Goal ¹	Units															
1,1,2-Trichloroethane	5	ug/L	1.0 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	4.3	0.80	1.0	0.60	0.60	0.20 U	0.20 U	4.1	2.7	0.60	0.40 U	0.40 U	0.50	3.3	0.40 U
Chloroethane		ug/L	1.0 U	0.40 U	0.20 U	NA	0.20 U	NA	NA	NA	NA	NA	0.50 U	0.50 U	0.50 U	NA	0.40 U
Chloroform	0.19	ug/L	1.0 U	0.30 U	0.50 U	0.50 U	0.50 U	9.1	0.20 U	0.30 U							
Methylene Chloride	5	ug/L	1.0 U	0.90 U	0.50 U	0.50 U	0.50 U	0.80 U	1.0 U	1.0 U	0.90 U	0.90 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U
Tetrachloroethene	5	ug/L	NA	0.40 U	1.0	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U
Trichloroethene	5	ug/L	6	0.40 U	0.40 U	0.40 U	0.70	0.40 U	0.30 U	0.30 U	0.10 U	0.10 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U
cis-1,2-Dichloroethene		ug/L	6.5	0.40 U	0.40 U	NA	0.40 U	NA	NA	NA	NA	NA	0.30 U	0.30 U	0.20 U	NA	0.40 U
Vinyl Chloride	2	ug/L	4.5	0.40 U	0.30 U	0.30 U	0.30 U	0.60 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U
Carbon Disulfide	1000	ug/L	NA	0.20 U	0.30 U	0.30 U	0.30 U	0.70 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U

		Location ID:	MW-18	MW-20D1	MW-20D1	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20D2	MW-20S
	S	Sample Date:	03/16/06	10/08/20	09/15/21	11/19/01	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/12/04	03/23/05	09/23/05	03/16/06	06/22/06	08/07/00
Volatile Organics	CAO Goal ¹	Units															
1,1,2-Trichloroethane	5	ug/L	6.6 U	1.0 U	1.0 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	3,600	0.60 J	1.0 U	0.20 U	0.20 U	0.40 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	13
Chloroethane		ug/L	NA	1.0 U	1.0 U	NA	NA	NA	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	NA
Chloroform	0.19	ug/L	10 U	1.0 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	0.20 U
Methylene Chloride	5	ug/L	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	0.80 U
Tetrachloroethene	5	ug/L	9.0 U	1.0 U	NA	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.30 U
Trichloroethene	5	ug/L	7.4 U	1.0 U	1.0 U	0.30 U	0.30 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
cis-1,2-Dichloroethene		ug/L	NA	1.0 U	1.0 U	NA	NA	NA	0.30 U	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	NA
Vinyl Chloride	2	ug/L	5.6 U	1.0 U	1.0 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	0.60 U
Carbon Disulfide	1000	ug/L	6.8 U	NA	NA	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.70 U



		Location ID:	MW-18 (7.67)	MW-18 (14.67)	MW-18 (7.67)	MW-18 (14.67)	MW-18 (7.67)	MW-18 (7.67)	MW-18 (14.67)	MW-18 (14.67)	MW-18 (7.67)	MW-18 (14.67)	MW-19D1	MW-19D1	MW-22D	MW-22D	MW-22D	MW-22D
		Sample Date:	10/03/17	10/03/17	11/20/18	11/20/18	09/20/19	10/08/20	10/08/20	09/20/19	9/14/2021	9/14/2021	08/07/00	12/19/01	11/15/01	12/19/01	09/17/02	03/04/03
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.30 U	1.0 U	0.20 U	0.20 U	0.30 U	0.30 U
1,2-Dichloroethane	5	ug/L	2.5	2.2	1.9	4.9	19	5.1	4.3	17	0.82 J	1.1	24	390	0.20 U	0.20 U	82	0.40 U
Chloroethane		ug/L	1.0 U	1.0 U	1.0 U	1.0 U	2.3	1.0 U	1.0 U	1.8	1.0 U	1.0 U	NA	NA	NA	NA	NA	0.50 U
Chloroform	0.19	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U
Methylene Chloride	5	ug/L	1.0 U	0.63 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 U	5.1 U	1.0 U	1.0 U	0.90 U	0.90 U
Tetrachloroethene	5	ug/L	1.0 U	NA	1.0 U	1.0 U	NA	1.0 U	1.0 U	NA	NA	NA	0.30 U	1.4 U	0.30 U	0.30 U	0.20 U	0.20 U
Trichloroethene	5	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.40 U	1.6 U	0.30 U	0.30 U	0.10 U	0.10 U
cis-1,2-Dichloroethene		ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	0.30 U
Vinyl Chloride	2	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.60 U	1.2 U	0.20 U	0.20 U	0.30 U	0.30 U
Carbon Disulfide	1000	ug/L	1.0 U	NA	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	0.70 U	1.2 U	0.20 U	0.20 U	0.30 U	0.30 U

		Location ID:	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D1	MW-19D2	MW-19D2	MW-19D2	MW-19D2	MW-19D2	MW-19D2	MW-19D2	MW-22S	MW-22S	MW-22S	MW-22S
		Sample Date:	10/03/17	11/20/18	09/20/19	10/08/20	10/29/21	08/07/00	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/12/04	10/07/02	03/03/03	10/09/03	03/18/04
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	0.30 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U				
1,2-Dichloroethane	5	ug/L	2.8	26	29	31	30	4.7	3.0	0.90	0.40 U	0.80	0.90	0.40 U	0.40 U	0.40 U	0.30 U	0.30 U
Chloroethane		ug/L	1.0 U	NA	NA	NA	0.50 U	0.50 U	NA	0.40 U	NA	0.50 U	0.50 U	NA				
Chloroform	0.19	ug/L	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U				
Methylene Chloride	5	ug/L	1.0 U	0.80 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.90 U	0.80 U	0.80 U				
Tetrachloroethene	5	ug/L	NA	1.0 U	NA	1.0 U	NA	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	0.20 U	0.20 U	0.30 U	0.30 U
Trichloroethene	5	ug/L	1.0 U	0.40 U	0.30 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U	0.10 U	0.10 U	0.20 U	0.20 U				
cis-1,2-Dichloroethene		ug/L	1.0 U	NA	NA	NA	0.30 U	0.20 U	NA	0.40 U	NA	0.30 U	0.20 U	NA				
Vinyl Chloride	2	ug/L	1.0 U	0.60 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	0.30 U	0.30 U	0.50 U	0.50 U				
Carbon Disulfide	1000	ug/L	NA	1.0 U	NA	NA	NA	3.2	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U

		Location ID:	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-20D1	MW-23	MW-23	MW-23 (6.3)	MW-23 (-0.7)
	S	ample Date:	03/23/05	09/23/05	03/16/06	06/22/06	05/02/11	11/21/14	06/04/15	11/16/15	10/05/16	10/03/17	11/20/18	09/20/19	05/02/11	05/02/11	11/20/14	11/20/14
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	12 U	12 U	1.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	5.4	2.7	2.2	1.7	2.0	1.1	1.2	1.0	1.1	0.89 J	0.86 J	0.75 J	280	280	94	56
Chloroethane		ug/L	0.40 U	0.20 U	NA	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	12 U	12 U	1.1	1.3
Chloroform	0.19	ug/L	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	0.57 J	1.0 U	12 U	12 U	1.0 U	1.0 U					
Methylene Chloride	5	ug/L	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	8.4 J	8.0 J	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	12 U	12 U	1.0 U	1.0 U
Trichloroethene	5	ug/L	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12 U	12 U	0.38 J	0.39 J
cis-1,2-Dichloroethene		ug/L	0.40 U	0.40 U	NA	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	12 U	12 U	0.58 J	0.66 J
Vinyl Chloride	2	ug/L	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12 U	12 U	0.91 J	0.52 J
Carbon Disulfide	1000	ug/L	0.20 U	0.30 U	0.30 U	0.30 U	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	12 U	12 U	1.0 U	1.0 U

	I	Location ID:	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-25I	MW-25I	MW-25I	MW-25I
	S	ample Date:	08/08/00	11/16/01	12/19/01	10/07/02	03/03/03	10/09/03	03/18/04	10/11/04	03/23/05	09/22/05	03/16/06	06/22/06	01/03/08	01/03/08	05/02/11	11/20/14
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	2.5	2.9	1.0	1.3
1,2-Dichloroethane	5	ug/L	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	0.30 U	0.30 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	170	170	6.2	56
Chloroethane		ug/L	NA	NA	NA	NA	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	0.40 U	0.40 U	1.0 U	1.0 U
Chloroform	0.19	ug/L	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	12	11	3.7	2.8						
Methylene Chloride	5	ug/L	0.80 U	1.0 U	1.0 U	0.90 U	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	0.60	0.60	1.3 U	1.0 U
Tetrachloroethene	5	ug/L	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.1	1.3	0 J	0.58 J
Trichloroethene	5	ug/L	0.40 U	0.30 U	0.30 U	0.10 U	0.10 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	20	22	9.0	18
cis-1,2-Dichloroethene		ug/L	NA	NA	NA	NA	0.30 U	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.9	2.1	0.55 J	2.8
Vinyl Chloride	2	ug/L	0.60 U	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	0.70	0.60	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	0.70 U	0.20 U	0.20 U	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.40 U	0.40 U	1.0 U	1.0 U



	ı	Location ID:	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D	MW-22D
	S	ample Date:	10/09/03	03/18/04	10/11/04	03/22/05	09/23/05	03/16/06	06/22/06	05/03/11	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	10/08/20
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U						
1,2-Dichloroethane	5	ug/L	0.30 U	0.30 U	0.40 U	0.40 U	0.30 U	1.3	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0	2.2	1.0 U	1.6	0.65 J
Chloroethane		ug/L	0.50 U	NA	0.40 U	0.40 U	0.20 U	NA	0.20 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	0.19	ug/L	0.20 U	0.20 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	0.80 U	0.80 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	1.0 U
Trichloroethene	5	ug/L	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	0.20 U	NA	0.40 U	0.40 U	0.40 U	NA	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	ug/L	0.50 U	0.50 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA

	I	Location ID:	MW-22S	MW-22S	MW-22S	MW-22S	MW-22S	MW-23										
	S	ample Date:	10/11/04	03/22/05	09/23/05	03/16/06	06/22/06	08/08/00	11/20/01	12/19/01	05/29/02	09/17/02	12/19/02	03/05/03	10/09/03	03/18/04	10/11/04	03/23/05
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.30 U	0.70	2.0 U	1.0 U	2.8 U	1.4 U	1.4 U	2.8 U	1.7 U	1.7 U	1.4 U	1.4 U				
1,2-Dichloroethane	5	ug/L	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	880	920	830	730	570	700	890	510	490	380	490
Chloroethane		ug/L	0.40 U	0.40 U	0.20 U	NA	0.20 U	NA	NA	NA	NA	NA	2.4 U	4.8 U	2.3 U	NA	1.8 U	1.8 U
Chloroform	0.19	ug/L	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	0.80	1.9 U	1.0 U	2.5 U	1.2 U	1.2 U	2.5 U	1.0 U	1.0 U	1.7 U	1.7 U
Methylene Chloride	5	ug/L	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	1.7 U	10 U	5.1 U	8.8 U	4.4 U	4.4 U	8.8 U	4.0 U	4.0 U	4.6 U	4.6 U
Tetrachloroethene	5	ug/L	0.40 U	0.60 U	2.6 U	1.4 U	2.4 U	1.2 U	1.2 U	2.4 U	1.6 U	1.6 U	1.8 U	1.8 U				
Trichloroethene	5	ug/L	0.40 U	0.80 U	3.1 U	1.6 U	1.4	0.60 U	0.60 U	1.2 U	0.90 U	0.90 U	2.0 U	2.0 U				
cis-1,2-Dichloroethene		ug/L	0.40 U	0.40 U	0.40 U	NA	0.40 U	NA	NA	NA	NA	NA	1.6 U	3.1 U	1.2 U	NA	1.8 U	1.8 U
Vinyl Chloride	2	ug/L	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	2.5	2.3 U	1.2 U	2.9 U	1.4 U	1.4 U	2.9 U	2.6 U	2.6 U	1.8 U	1.8 U
Carbon Disulfide	1000	ug/L	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	18	2.5 U	1.2 U	3.0 U	1.5 U	1.5 U	3.0 U	1.2 U	1.2 U	1.2 U	1.2 U

		Location ID	: MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)	MW-23 (6.3)	MW-23 (-0.7)
		Sample Date	: 06/04/15	06/04/15	11/16/15	11/16/15	10/04/16	10/04/16	10/03/17	10/03/17	11/20/18	11/20/18	09/20/19	09/20/19	10/08/20	10/08/20	9/15/2021	9/15/2021
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	3.0 U	3.0 U	0.094 J	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	ug/L	55	55	24	28	17	27	17	18	61	15	18	19	13	27	13	14
Chloroethane		ug/L	3.0 U	0.97 J	1.1	1.1	NA	NA	1.0 U	0.92 J	2.5 U	1.0 U	1.0 U	0.95 J	NA	1.0 U	1.0 U	1.0 U
Chloroform	0.19	ug/L	3.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	ug/L	3.0 U	3.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	3.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	2.5 U	1.0 U	NA	NA	1.0 U	1.0 U	NA	
Trichloroethene	5	ug/L	0.53 J	0.55 J	0.58 J	0.58 J	0.50 J	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		ug/L	3.0 U	0.83 J	0.77 J	0.79 J	NA	NA	0.74 J	0.78 J	2.5 U	1.0 U	0.87 J	0.83 J	1.0 U	0.90 J	1.0 U	1.0 U
Vinyl Chloride	2	ug/L	3.0 U	3.0 U	0.33 J	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1000	ug/L	3.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	2.5 U	1.0 U	NA	NA	NA	NA	NA	NA

	I	Location ID:	MW-25I	MW-25I	MW-25I	MW-25I	MW-25I	MW-25I	MW-25I	MW-25I	MW-26	MW-26	MW-26	MW-26	MW-27	MW-27	MW-27	MW-27
	S	ample Date:	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18	09/20/19	10/08/20	9/14/2021	12/07/06	01/03/08	01/03/08	05/03/11	12/07/06	01/03/08	01/03/08	05/02/11
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.3	1.5	1.4 J	2.0 U	0.84 J	1.1	1.0 U	1.0 U	0.40 U	0.20 U	0.40 U	3.0 U	22 U	16	23	500 U [500 U]
1,2-Dichloroethane	5	ug/L	41	51	53	50	13	25	18	2.7 J	53	84	34	65	12,000	8,700	11,000	8,700 [8,800]
Chloroethane		ug/L	1.0 U	1.0 U	NA	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.90 U	0.40 U	0.90 U	3.0 U	43 U	32	43 U	500 U [500 U]
Chloroform	0.19	ug/L	1.9	1.9	1.9	1.3 J	1.1	0.90 J	1.0 U	1.0 U	9.1	1.7	2.7	3.0 U	20 U	10 U	20 U	500 U [500 U]
Methylene Chloride	5	ug/L	1.0 U	1.0 U	5.0 U	2.0 UB	1.0 U	1.0 U	1.0 U	1.0 U	0.80 U	0.40 U	0.80 U	3.0 U	40 U	20 U	40 U	220 JB [180 J]
Tetrachloroethene	5	ug/L	0.58 J	0.69 J	0.75 J	NA	0.56 J	NA	1.0 U	NA	0.80 U	0.40 U	0.80 U	3.0 U	42 U	21 U	42 U	500 U [500 U]
Trichloroethene	5	ug/L	20	23	23	22 J	10	23	15	1.7 J	220	190	170	160	36 U	32	36 U	500 U [500 U]
cis-1,2-Dichloroethene		ug/L	3.0	4.4	NA	4.7	1.5	3.5	2.9	1.0 U	78	54	55	47	28 U	14 U	28 U	500 U [500 U]
Vinyl Chloride	2	ug/L	1.0 U	0.26 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.2	5.4	3.3	4.9	78	46	52	500 U [500 U]
Carbon Disulfide	1000	ug/L	1.0 U	1.0 U	1.0 U	NA	1.0 U	NA	NA	NA	0.90 U	0.40 U	0.90 U	3.0 U	44 U	22 U	44 U	500 U [500 U]



	ı	Location ID:	MW-22D	MW-22D1	MW-22D2	MW-22S	MW-22S	MW-27	MW-27	MW-27	MW-27	MW-28D						
	s	ample Date:	09/14/21	08/08/00	08/08/00	11/15/01	12/19/01	11/20/18	09/20/19	10/08/20	09/15/21	05/02/11	11/20/14	06/04/15	11/16/15	10/04/16	10/03/17	11/20/18
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.0 U	0.30 U	0.30 U	0.20 U	0.20 U	3.7	4.1	1.0 U	1.0 U	250 U	2.8 J	200 U	5.1 J	100 U	2.9	4.1
1,2-Dichloroethane	5	ug/L	0.59 J	0.20 U	0.20 U	0.20 U	0.20 U	7.7	13	13	1.0 UJ	5,700	3,500	3,500	3,200	2,700	2,000 D	1,900 D
Chloroethane		ug/L	1.0 U	NA	NA	NA	NA	9.9	16	9.2	1.0 U	250 U	8.0 J	200 U	11 J	NA	8	4.3
Chloroform	0.19	ug/L	1.0 U	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U	1.0 U	1.0 U	1.0 UJ	250 U	1.2 J	200 U	20 U	20 U	0.83 J	0.68 J
Methylene Chloride	5	ug/L	1.0 U	0.80 U	0.80 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	250 U	10 U	200 U	20 U	100 U	0.40 J	1.0 U
Tetrachloroethene	5	ug/L	NA	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	NA	1.0 U		250 U	10 U	200 U	20 U	20 U	NA	0.84 J
Trichloroethene	5	ug/L	1.0 U	0.40 U	0.40 U	0.30 U	0.30 U	8	12	6.2	1.0 UJ	250 U	15	200 U	17 J	15 J	19	14
cis-1,2-Dichloroethene		ug/L	1.0 U	NA	NA	NA	NA	5.3	7.3	4.5	1.0 U	250 U	6.9 J	200 U	8.0 J	NA	6.9	5.3
Vinyl Chloride	2	ug/L	1.0 U	0.60 U	0.60 U	0.20 U	0.20 U	5.2	13	5.9	1.0 UJ	250 U	25	200 U	21	14 J	18	8.5
Carbon Disulfide	1000	ug/L	NA	0.70 U	0.70 U	0.20 U	0.20 U	1.0 U	NA	NA	NA	250 U	10 UJ	200 U	20 U	20 U	NA	1.0 U

		Location ID:	MW-23	MW-23	MW-23	MW-23	MW-23	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-2	MWBR-2	MWBR-2	MWBR-2	MWBR-2
	S	ample Date:	09/22/05	03/16/06	06/22/06	01/03/08	01/03/08	06/21/05	09/22/05	12/15/05	03/16/06	06/22/06	05/03/11	09/29/98	01/12/99	04/12/99	11/13/01	12/19/01
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	1.6 U	1.6 U	1.6 U	0.40 U	0.40 U	16 U	18	16 U	33 U	16 U	75 U	20 U	5.0 U	0.35 U	0.20 U	0.20 U
1,2-Dichloroethane	5	ug/L	580	490	450	300	310	6,500	6,900	3,100	7,500	5,600	1,400	7,000 D	16	7.5	9.8	8.4
Chloroethane		ug/L	3.1	NA	1.2 U	0.90 U	0.90 U	19	12 U	12 U	NA	12 U	75 U	NA	10 U	NA	NA	NA
Chloroform	0.19	ug/L	2.6 U	2.6 U	2.6 U	0.40 U	0.40 U	26 U	26 U	26 U	52 U	26 U	75 U	20 U	5.0 U	0.59 U	0.20 U	0.20 U
Methylene Chloride	5	ug/L	2.6 U	2.6 U	2.6 U	0.80 U	0.80 U	26 U	26 U	26 U	51 U	26 U	75 U	73 B	5.0 U	1.1 U	1.0 U	1.0 U
Tetrachloroethene	5	ug/L	2.2 U	2.2 U	2.2 U	0.80 U	0.80 U	22 U	22 U	22 U	45 U	22 U	75 U	20 U	5.0 U	0.62 U	0.30 U	0.30 U
Trichloroethene	5	ug/L	1.8 U	1.8 U	1.8 U	0.70 U	0.70 U	250	280	100	200	180	91	40	5.0 U	0.44 U	0.30 U	0.30 U
cis-1,2-Dichloroethene		ug/L	2.2 U	NA	2.2 U	0.80	0.60 U	74	61	32	NA	45	19 J	NA	NA	NA	NA	NA
Vinyl Chloride	2	ug/L	3.8	1.4 U	2.9	1.8	1.6	14 U	14 U	14 U	28 U	14 U	75 U	20 U	10 U	0.71 U	0.20 U	0.20 U
Carbon Disulfide	1000	ug/L	1.7 U	1.7 U	2.7 U	0.90 U	0.90 U	17 U	17 U	17 U	34 U	17 U	75 U	20 U	5.0 U	0.56 U	0.20 U	0.20 U

		Location ID:	MW-24	MW-24	MW-25	MW-25	MW-25	MWBR-3	MWBR-4									
	S	Sample Date:	12/07/06	05/02/11	12/07/06	01/03/08	05/02/11	04/12/99	11/14/01	12/19/01	03/03/03	10/09/03	09/23/05	12/15/05	03/16/06	06/22/06	05/02/11	01/12/99
Volatile Organics	CAO Goal ¹	Units																
1,1,2-Trichloroethane	5	ug/L	0.20 U	1.0 U	9.2 [7.8]	8.0	5.4 J	0.35 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	5.0 U
1,2-Dichloroethane	5	ug/L	0.30 U	1.0 U	1,300 [1,200]	850	630	0.21 U	0.20 U	0.20 U	0.40 U	0.30 U	0.30 U	1.1	1.0	0.40	5.0	240 D
Chloroethane		ug/L	0.40 U	1.0 U	4.3 U [4.3 U]	4.3 U	25 U	NA	NA	NA	0.50 U	0.50 U	0.20 U	0.20 U	NA	0.20 U	1.0 U	10 U
Chloroform	0.19	ug/L	0.90	1.0 U	7.6 [6.5]	6.6	25 U	0.59 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.50 U	2.8	5.0 U
Methylene Chloride	5	ug/L	0.40 U	1.0 U	4.0 U [4.0 U]	4.0 U	25 U	1.1 U	1.0 U	1.0 U	0.90 U	0.80 U	0.50 U	0.50 U	0.50 U	0.50 U	17	8.0
Tetrachloroethene	5	ug/L	0.40 U	1.0 U	4.2 U [4.2 U]	4.2 U	25 U	0.62 U	0.30 U	0.30 U	0.20 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0	5.0 U
Trichloroethene	5	ug/L	0.40 U	1.0 U	42 [36]	46	42	0.44 U	0.30 U	0.30 U	0.10 U	0.20 U	0.90	1.0	0.80	0.70	1.0 U	5.0 U
cis-1,2-Dichloroethene		ug/L	0.30 U	1.0 U	6.9 [7.2]	9.1	7.3 J	NA	NA	NA	0.30 U	0.20 U	0.40 U	0.40 U	NA	0.40 U	1.0 U	NA
Vinyl Chloride	2	ug/L	0.20 U	1.0 U	5.1 [4.2]	3.5	25 U	0.71 U	0.20 U	0.20 U	0.30 U	0.50 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	10 U
Carbon Disulfide	1000	ug/L	0.40 U	1.0 U	4.4 U [4.4 U]	4.4 U	25 U	0.56 U	0.20 U	0.20 U	0.30 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	5.0 U

	L	ocation ID:	MW-27	MW-27	MW-27	MW-27	MW-27	MWBR-3	MWBR-3	MWBR-3	MWBR-3	MWBR-4	MWBR-4
	Sa	ample Date:	11/20/14	06/04/15	11/16/15	10/05/16	10/03/17	08/23/04	10/12/04	03/23/05	06/21/05	12/19/01	03/03/03
Volatile Organics	CAO Goal ¹	Units											
1,1,2-Trichloroethane	5	ug/L	8.6 J	400 U	8.8 J	5.1	2.9	0.30 U	0.30 U	0.30 U	0.30 U	2.0 U	2.8 U
1,2-Dichloroethane	5	ug/L	6,600	5,900	5,000	690	43	0.40 U	0.40 U	0.40 U	0.30 U	1,300	1,100
Chloroethane		ug/L	29	400 U	26 J	NA	18	0.40 U	0.40 U	0.40 U	0.20 U	NA	4.8 U
Chloroform	0.19	ug/L	25 U	400 U	50 U	1.0 U	2.0 U	0.30 U	0.30 U	0.30 U	0.50 U	1.9 U	2.5 U
Methylene Chloride	5	ug/L	25 U	400 U	50 U	5.0 U	2.0 UB	0.90 U	0.90 U	0.90 U	0.50 U	14	8.8 U
Tetrachloroethene	5	ug/L	25 U	400 U	50 U	1.0 U	NA	0.40 U	0.40 U	0.40 U	0.40 U	2.8 U	2.4 U
Trichloroethene	5	ug/L	10 J	400 U	13 J	10	11 J	0.40 U	0.40 U	0.40 U	1.2	21	1.2 U
cis-1,2-Dichloroethene		ug/L	6.4 J	400 U	50 U	NA	7.3	0.40 U	0.40 U	0.40 U	0.40 U	NA	3.1 U
Vinyl Chloride	2	ug/L	6.8 J	400 U	9.4 J	5.6	7.9	0.40 U	0.40 U	0.40 U	0.30 U	42	15
Carbon Disulfide	1000	ug/L	25 U	400 U	50 U	1.0 U	NA	0.20 U	0.20 U	0.20 U	0.30 U	2.5 U	3.0 U



	I	Location ID:	MW-28D	MW-28D	MW-28D	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1	MWBR-1
	S	ample Date:	09/20/19	10/08/20	09/14/21	09/24/98	01/12/99	04/12/99	11/15/01	12/19/01	03/03/03	10/09/03	03/18/04	08/23/04	10/12/04	03/23/05
Volatile Organics	CAO Goal ¹	Units														
1,1,2-Trichloroethane	5	ug/L	130 U	1.0 J	5.0 UJ	8.0	15	18 U	2.0 U	0.20 U	14 U	23	13	35	28	14 U
1,2-Dichloroethane	5	ug/L	2,400 J	450 D	1,200 D	3,400,000 D	3,000 D	5,600	1,800	60	4,900	7,500	3,900	8,400	6,800	6,300
Chloroethane		ug/L	130 U	10 U	5.0 U	NA	10 U	NA	NA	NA	24 U	23 U	NA	18 U	18 U	18 U
Chloroform	0.19	ug/L	130 U	1.0 U J	5.0 U	13,000	5.0 U	30 U	1.9 U	0.20 U	12 U	9.5 U	4.8 U	17 U	17 U	17 U
Methylene Chloride	5	ug/L	130 U	1.0 U J	5.0 UJ	34	5.0 U	56 U	10 U	1.0 U	44 U	40 U	20 U	46 U	46 U	46 U
Tetrachloroethene	5	ug/L	NA	1.0 U J	NA	2.0 U	5.0 U	31 U	2.8 U	0.30 U	12 U	16 U	7.8 U	18 U	18 U	18 U
Trichloroethene	5	ug/L	130 U	2.7 J	5.0 UJ	16,000	42	22 U	30	1.2	110	290	140	330	290	230
cis-1,2-Dichloroethene		ug/L	130 U	1.8 J	5.0 U	NA	NA	NA	NA	NA	16 U	68	NA	65	54	94
Vinyl Chloride	2	ug/L	130 U	2.6 J	5.0 U	2.0 U	10	36 U	9.3	0.20 U	14 U	26 U	13 U	18 U	18 U	18 U
Carbon Disulfide	1000	ug/L	NA	NA	NA	2,000 U	5.0 U	28 U	2.5 U	0.20 U	15 U	12 U	6.0 U	12 U	12 U	12 U

	Location				MWBR-2	MWBR-3	MWBR-3									
	S	ample Date:	03/03/03	10/09/03	03/18/04	08/23/04	10/12/04	03/22/05	06/21/05	09/22/05	12/15/05	03/16/06	06/22/06	05/02/11	09/29/98	01/12/99
Volatile Organics	CAO Goal ¹	Units														
1,1,2-Trichloroethane	5	ug/L	0.30 U	1.0 U	2.0 U	5.0 U										
1,2-Dichloroethane	5	ug/L	2.9	0.60	0.30 U	0.40 U	0.40 U	0.40 U	1.2	2.1	2.7	3.0	1.7	2.6	2.0 U	5.0 U
Chloroethane		ug/L	0.50 U	0.50 U	NA	0.40 U	0.40 U	0.40 U	0.20 U	0.20 U	0.20 U	NA	0.20 U	1.0 U	NA	10 U
Chloroform	0.19	ug/L	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	2.0 U	5.0 U
Methylene Chloride	5	ug/L	0.90 U	0.80 U	0.80 U	0.90 U	0.90 U	0.90 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.7	5.0 U	5.0 U
Tetrachloroethene	5	ug/L	0.20 U	0.30 U	0.30 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	1.0 U	2.0 U	5.0 U
Trichloroethene	5	ug/L	0.10 U	0.20 U	0.20 U	0.40 U	0.40 U	0.40 U	0.70	0.60	0.40	0.40	0.50	1.0 U	2.0 U	5.0 U
cis-1,2-Dichloroethene		ug/L	0.30 U	0.30	NA	0.40 U	NA	0.40 U	1.0 U	NA	NA					
Vinyl Chloride	2	ug/L	0.30 U	0.50 U	0.50 U	0.40 U	0.40 U	0.40 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	2.0 U	10 U
Carbon Disulfide	1000	ug/L	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	1.0 U	2.0 U	5.0 U

		Location ID:	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-4	MWBR-3
	S	ample Date:	04/12/99	11/15/01	10/09/03	03/18/04	08/23/04	10/12/04	03/23/05	06/21/05	09/22/05	12/15/05	03/16/06	06/22/06	05/03/11	03/18/04
Volatile Organics	CAO Goal ¹	Units														
1,1,2-Trichloroethane	5	ug/L	0.35 U	1.0 U	1.7 U	1.7 U	1.4 U	1.4 U	1.4 U	3.3 U	1.6 U	3.3 U	3.3 U	3.3 U	12 U	0.30 U
1,2-Dichloroethane	5	ug/L	210 D	510	610	740	620	550	890	760	730	760	710	760	350	0.30 U
Chloroethane		ug/L	NA	NA	2.3 U	NA	1.8 U	1.8 U	1.8 U	2.4 U	1.2 U	2.4 U	NA	2.4 U	12 U	NA
Chloroform	0.19	ug/L	0.59 U	1.0 U	1.0 U	1.0 U	1.7 U	1.7 U	1.7 U	5.2 U	2.6 U	5.2 U	5.2 U	5.2 U	12 U	0.20 U
Methylene Chloride	5	ug/L	4.6	5.1 U	8.2	10	7.6	6.6	6.8	9.2	7.8	9.9	10	22	12	0.80 U
Tetrachloroethene	5	ug/L	0.62 U	1.4 U	1.6 U	1.6 U	1.8 U	1.8 U	1.8 U	4.5 U	2.2 U	4.5 U	4.5 U	4.5 U	12 U	0.30 U
Trichloroethene	5	ug/L	0.44 U	1.8	1.0	2.2	2.0 U	2.0 U	2.0 U	3.7 U	1.8 U	3.7 U	3.7 U	3.7 U	12 U	0.20 U
cis-1,2-Dichloroethene		ug/L	NA	NA	1.2 U	NA	1.8 U	1.8 U	1.8 U	4.3 U	2.2 U	4.3 U	NA	4.3 U	12 U	NA
Vinyl Chloride	2	ug/L	0.71 U	11	18	32	23	22	43	34	46	60	35	50	310	0.50 U
Carbon Disulfide	1000	ug/L	0.56 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	3.4 U	1.7 U	3.4 U	3.4 U	3.4 U	12 U	0.20 U

	L	ocation ID
	Sa	ample Date
Volatile Organics	CAO Goal ¹	Units
1,1,2-Trichloroethane	5	ug/L
1,2-Dichloroethane	5	ug/L
Chloroethane		ug/L
Chloroform	0.19	ug/L
Methylene Chloride	5	ug/L
Tetrachloroethene	5	ug/L
Trichloroethene	5	ug/L
cis-1,2-Dichloroethene		ug/L
Vinyl Chloride	2	ug/L
Carbon Disulfide	1000	ug/L

Appendix G

Historical Analytical Data 2021 Annual Groundwater Performance Monitoring Report 1300 Revolution Street

Havre de Grace, Maryland

Notes:

- 1. Values exceeding the numerical CAO goals are highlighted gray.
- 2. Duplicate sample results are provided in brackets adjacent to results presented for the parent sample location.
- 3. The reporting limit for TCE in 2021 was 10 ug/L, greater the CAO goal of 5 ug/L.

μg/L = microgram per liter

CAO = Corrective Action Objective

NA = not analyzed or measured

Laboratory Qualifiers:

- B = Indicates the presence of the analyte in the blank in addition to the sample.
- D = Compound quantitated using a secondary dilution.
- E = Analyte exceeded calibration range.
- J = Indicates an estimated value.
- U = Indicates the analyte was analyzed but not detected above the detection limit.
- UB = Compound considered non-detect at the listed value due to associated blank contamination.

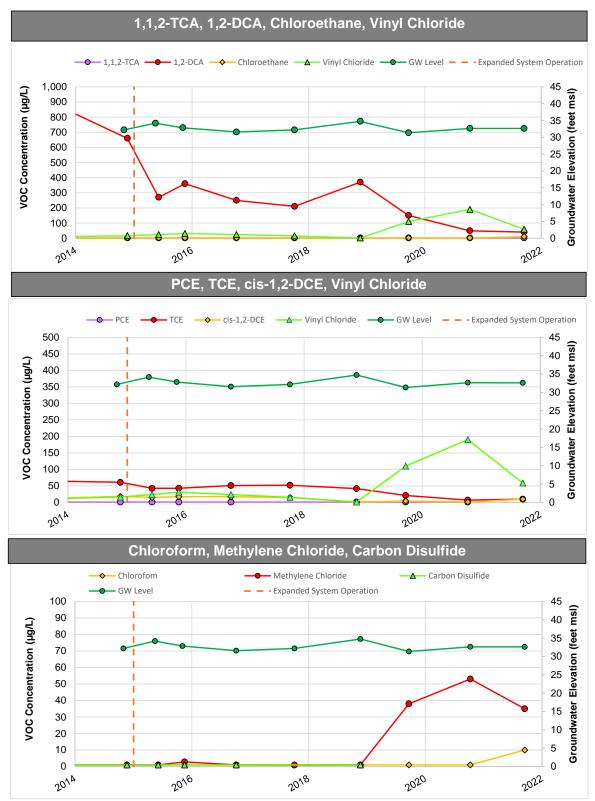


Appendix H

Trend Plots



Figure H-1
POC Well MW-3, On Site, Deep Overburden

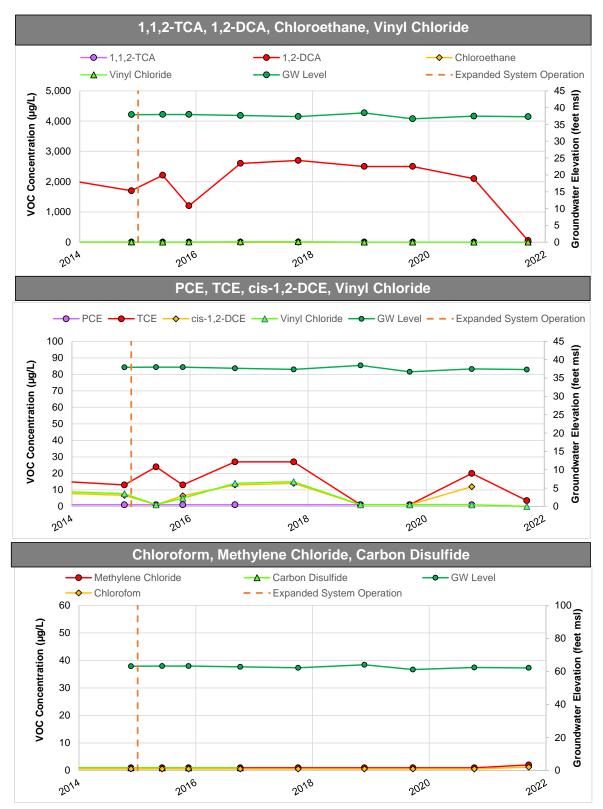


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-2
Well MW-6I, On Site, Intermediate Overburden



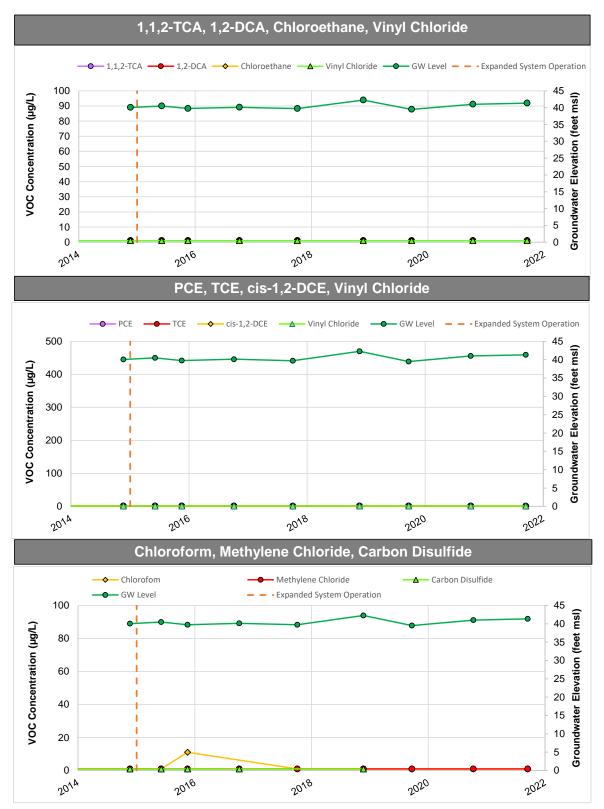
Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater

msl = mean sea level



Figure H-3
POC Well MW-12S, On Site, Intermediate Overburden

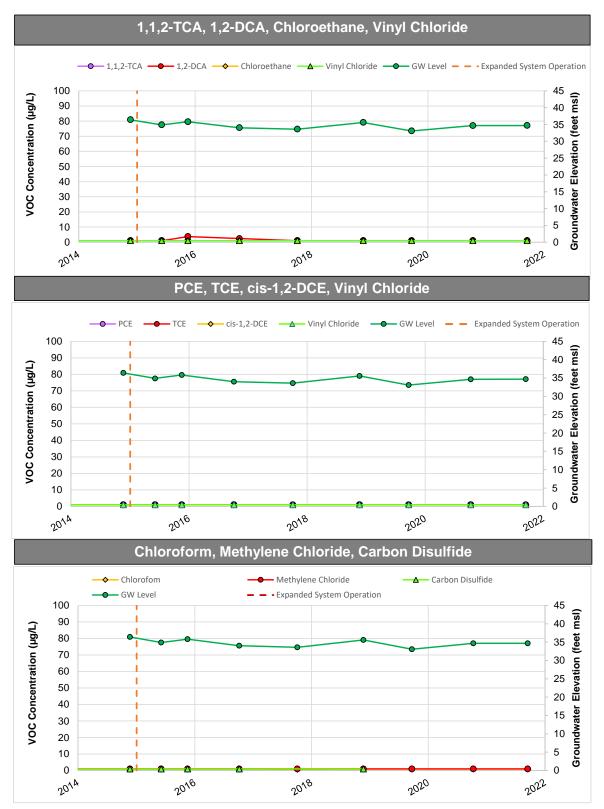


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-4
POC Well MW-12D, On Site, Deep Overburden

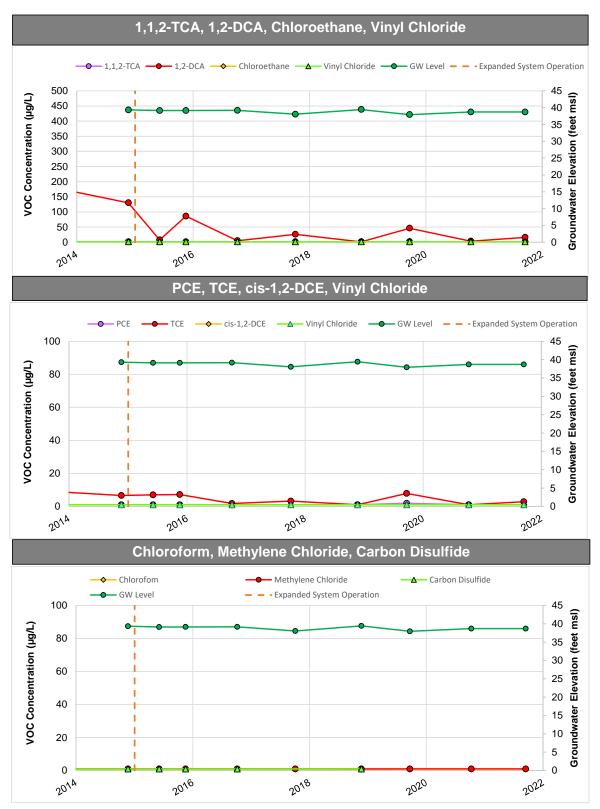


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-5
POC Well MW-13D, On Site, Intermediate Overburden

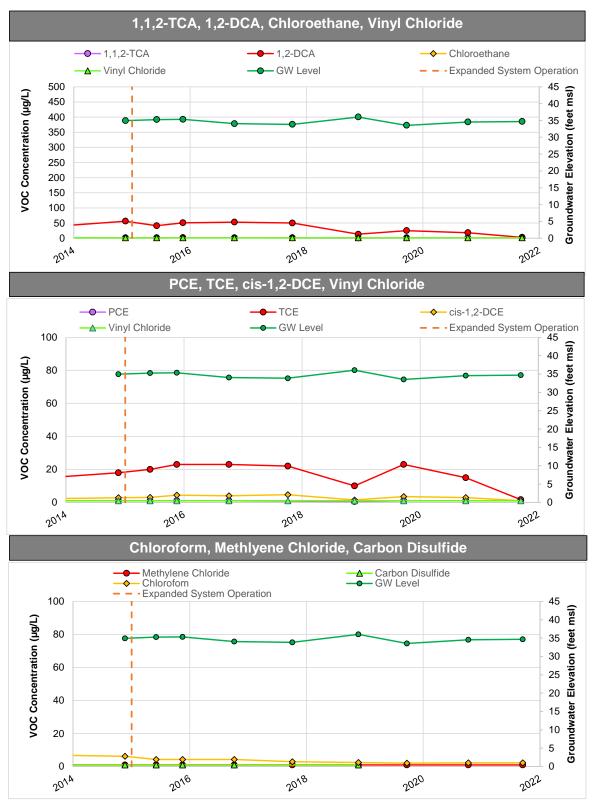


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-6
Well MW-25I, On Site, Intermediate Overburden

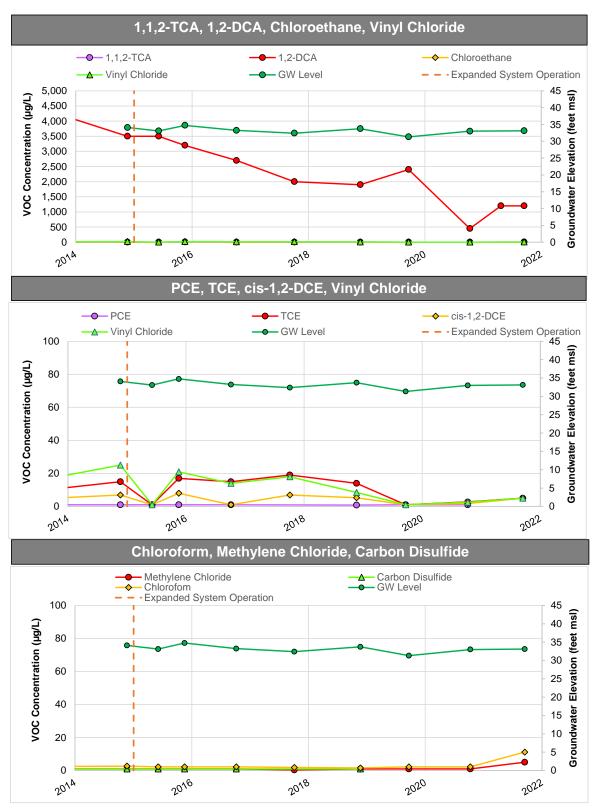


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-7
Well MW-28D, On Site, Deep Overburden

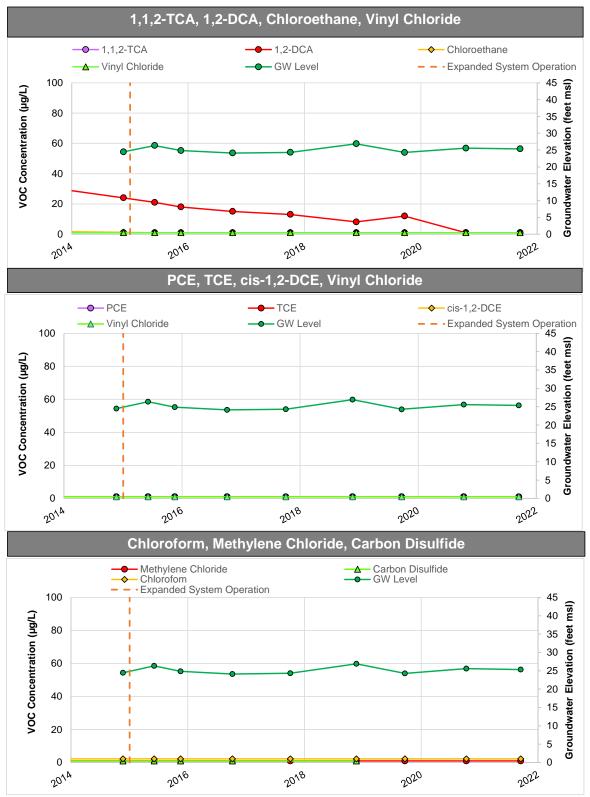


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-8
Well MW-14, Off Site, Deep Overburden

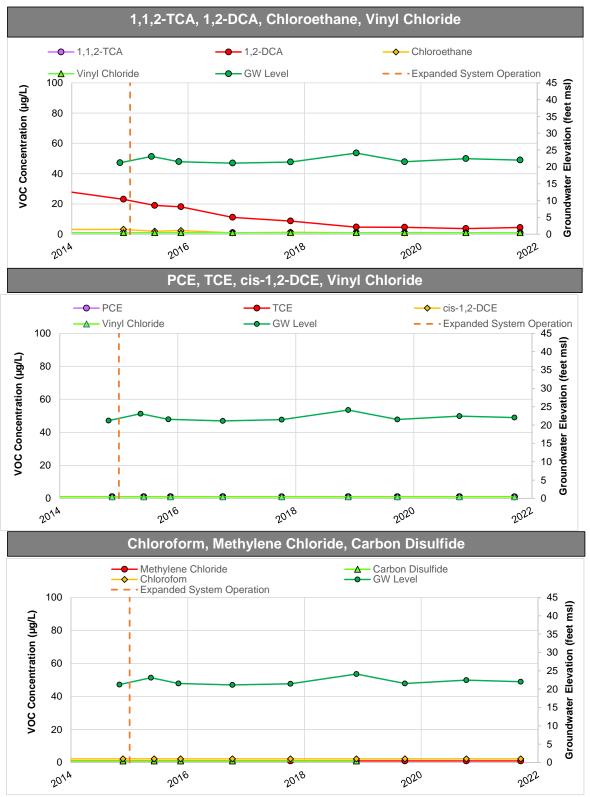


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-9
Well MW-14I, Off Site, Intermediate Overburden

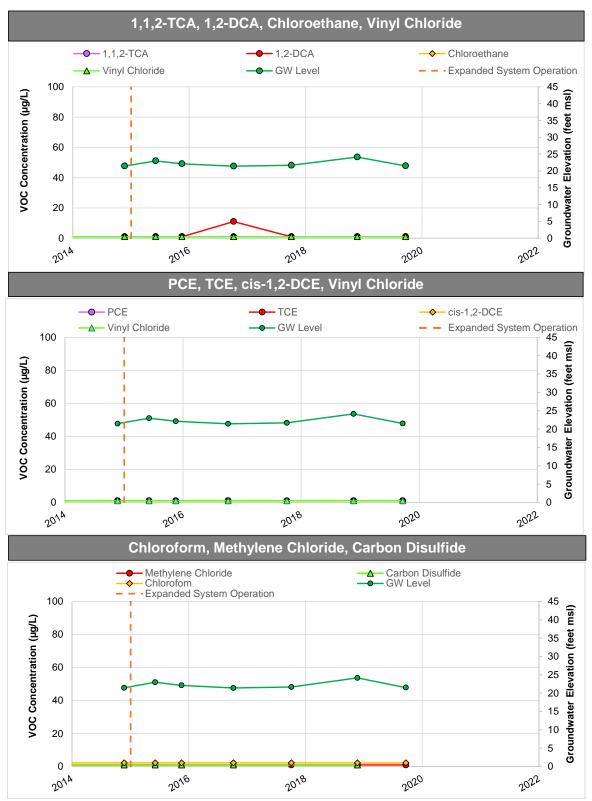


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-10 Well MW-15, Off Site, Deep Overburden



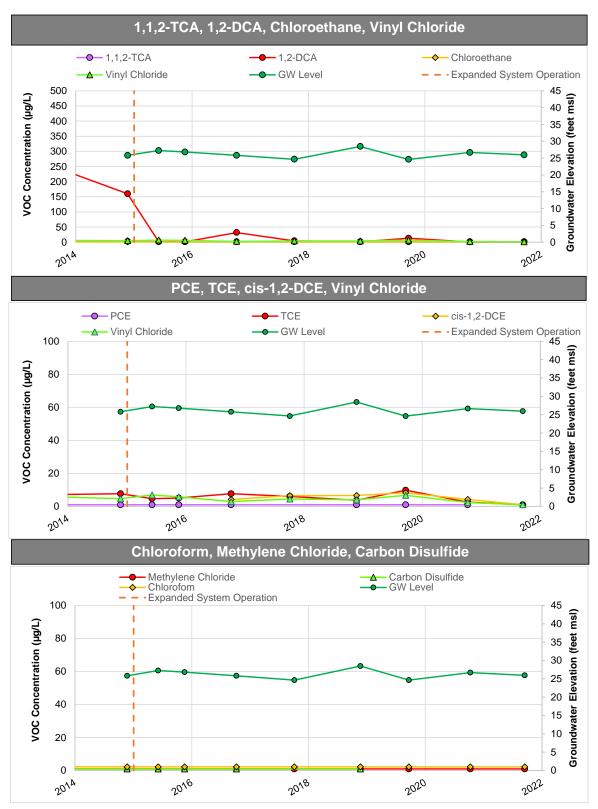
Notes:

Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-11 Well MW-16, Off Site, Deep Overburden



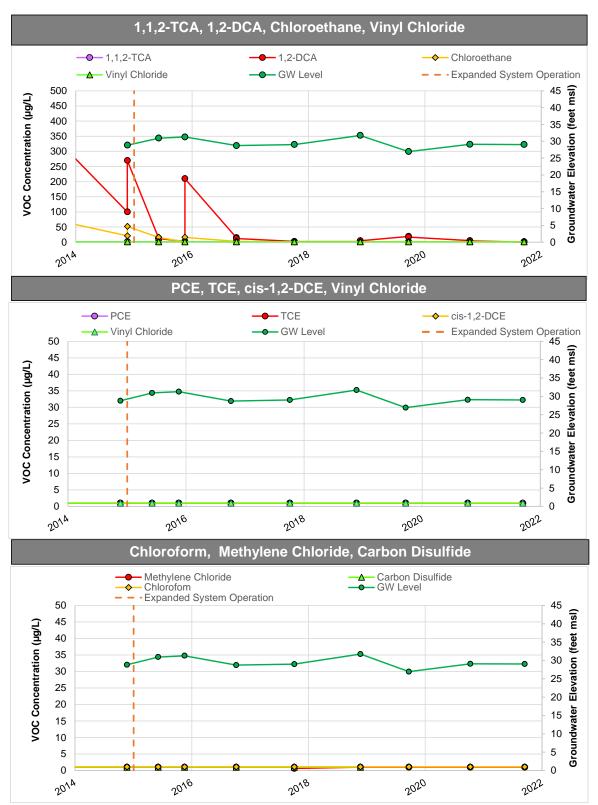
Notes:

Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-12 Well MW-18, Off Site, Deep Overburden



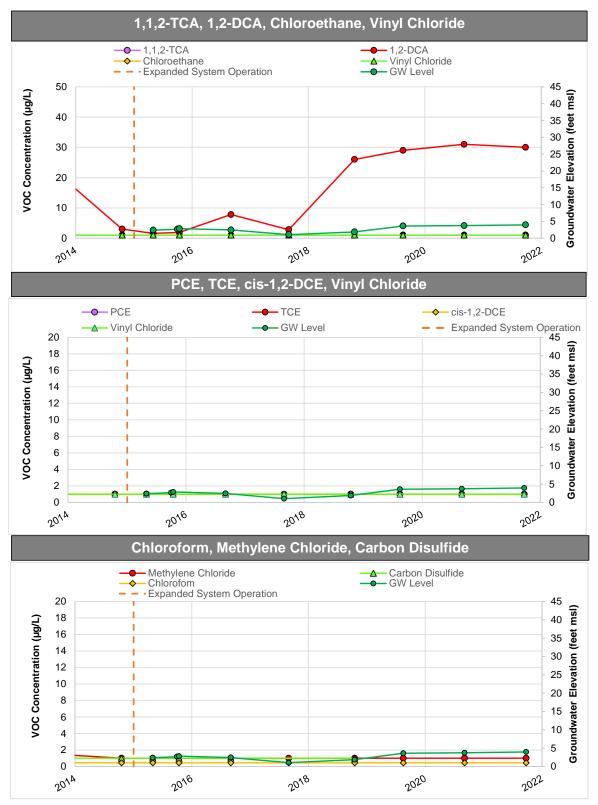
Notes

Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-13
POC Well MW-19D1, Off Site, Deep Overburden

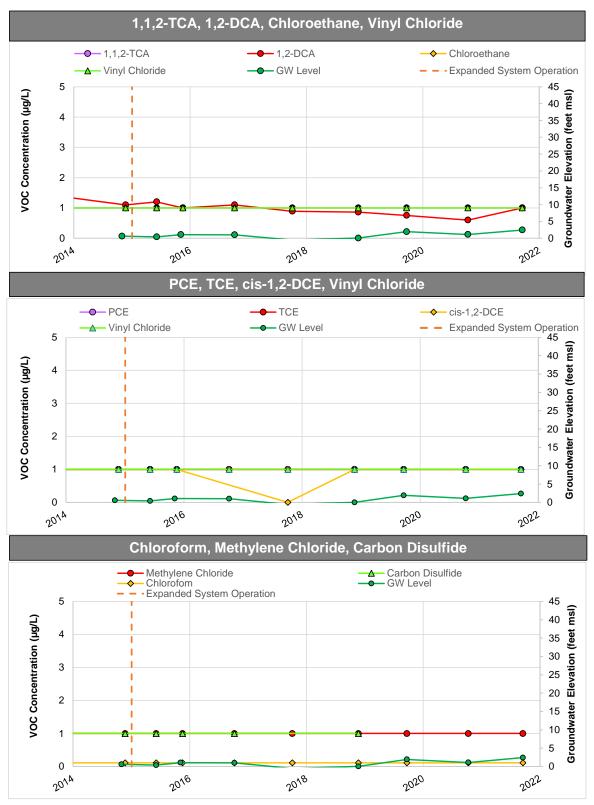


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-14
POC Well MW-20D1, Off Site, Deep Overburden

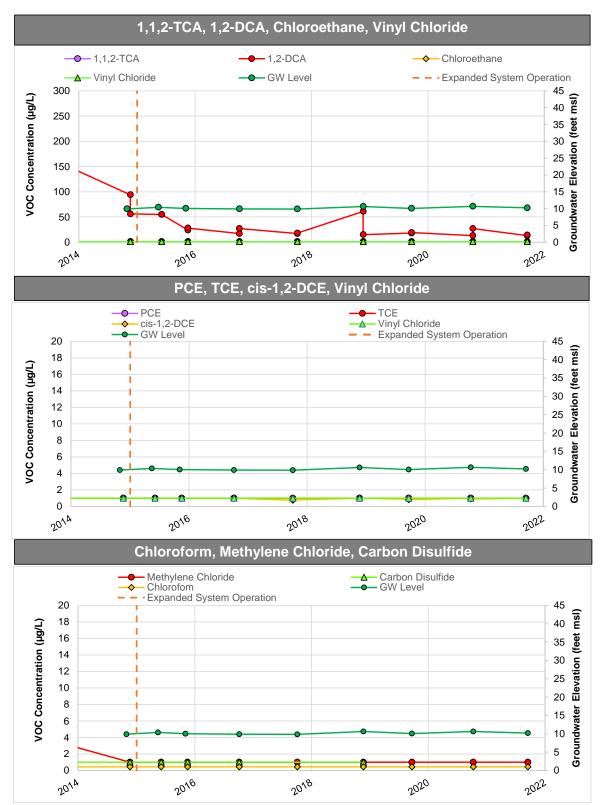


Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-15 Well MW-23, Off Site, Deep Overburden



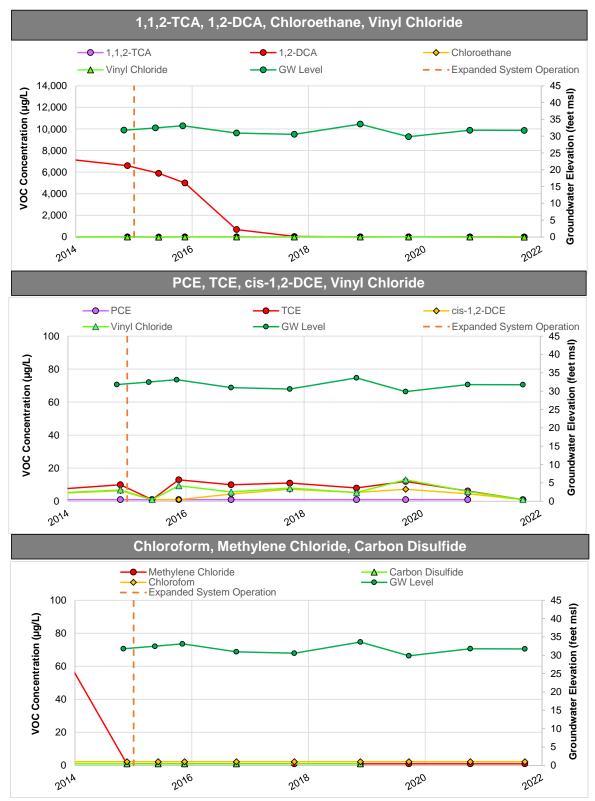
Notes:

Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 μ g/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level



Figure H-16 Well MW-27, Off Site, Deep Overburden



Notes

Reporting limits varied through time. For graphing purposes, nondetect values are plotted as 1 µg/L. See historical results table for actual reporting limits.

μg/L = microgram per liter cis-1,2-DCE = cis-1,2-dichloroethene 1,2-DCA = 1,2-dichloroethane 1,1,2-TCA = 1,1,2-trichloroethane GW = groundwater msl = mean sea level

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